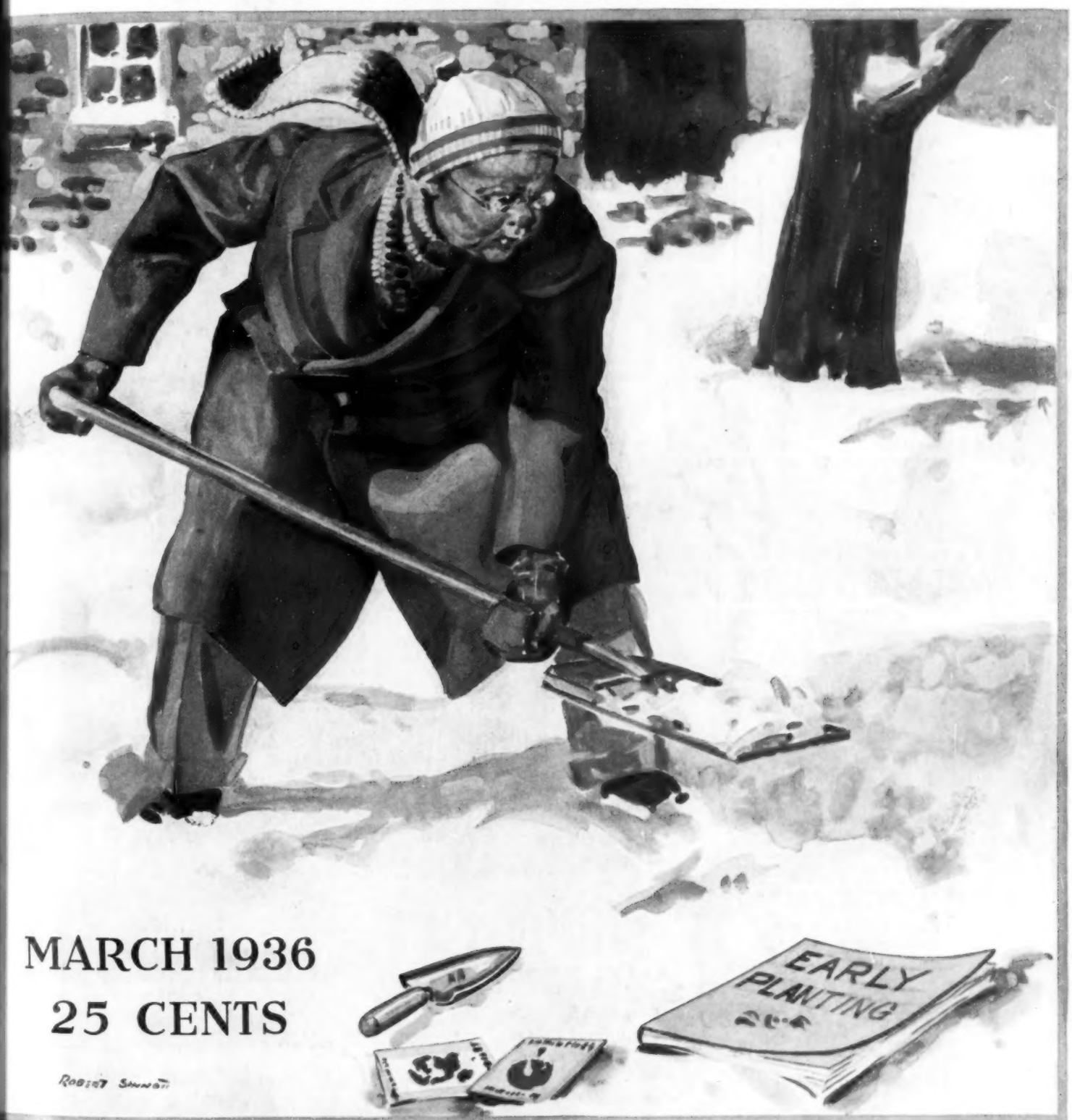
HYGEIA

The HEALTH MAGAZINE

PUBLISHED BY THE AMERICAN MEDICAL ASSOCIATION



MARCH 1936
25 CENTS

Meeting Emergencies at Home

aricose Veins

Sex Education

$50,000.00 HEADLINE HUNT!

for these two famous brands of tuna . .

18,203 PRIZES

for the best answers IN 10 WORDS OR LESS!

203 giant capital prizes totaling $10,000.00 in CASH!

TEN little words—or less—may win a fortune for you! This $50,000.00 Headline Hunt gives you 500 big chances to win—every week for 36 weeks! You can win a gift of one dozen cans of supreme quality tuna this week—and you can win again and again on succeeding weeks! The more Weekly Qualifying Prizes you win, the more opportunities you have to secure one or more of the 203 Capital Prizes totaling $10,000.00 in cash!

Here's all you have to do! . . . Simply suggest in 10 words or less what the chef should say in an advertisement about either *Chicken of the Sea Brand Tuna* or *White Star Tuna!* It's easy as A-B-C!

Leading stores . . . everywhere . . . feature one of these two famous brands of tuna! For 24 years, *Chicken of the Sea Brand Tuna* and *White Star Tuna* have been America's first choice for supreme goodness . . . because only the prized, tender, delicious *light* tuna meat is packed! That's why these two brands of tuna continuously outsell all other comparable brands combined! Millions of housewives serve this alluring sea-food delicacy every week—because it creates dozens of delightfully different hot and cold dishes, and because it is a ready source of Vitamins "A" and "D" as well as Iodine, that effective preventive of nutritional goiter! Enjoy this matchless food-delicacy at the low cost of ordinary "staple" foods.

Read the rules carefully. Send in as many entries as you wish—just make sure to enclose *two* labels from *Chicken of the Sea Brand Tuna* or *White Star Tuna*—or two label-replicas—with each individual entry! Get busy now; win this week!

Follow these simple RULES:—

ALL WINNERS OF WEEKLY PRIZES

Automatically become exclusive participants for these alluring Capital CASH Prizes!

GRAND PRIZE	$2,500.00
2ND PRIZE . .	1,000.00
3RD PRIZE . . .	500.00
20 PRIZES, each	100.00
40 PRIZES, each	50.00
40 PRIZES, each	25.00
100 PRIZES, each	10.00

500 Weekly Qualifying PRIZES

Every Week for 36 Weeks . . Consisting of Gifts of One DOZEN CANS of either Chicken of the Sea Brand Tuna, or White Star Tuna

1 . . . Everyone is eligible for these handsome awards . . . except employees of Van Camp Sea Food Company, Inc., and members of employees' families.

2 . . . Your entry may contain 10 words or less. Each must be accompanied by two labels from **Chicken of the Sea Brand Tuna** or **White Star Tuna,** or two label-replicas, with each individual entry. You may submit as many different headlines as you wish—but you must enclose **two** labels from either **Chicken of the Sea Brand Tuna** or **White Star Tuna,** or **two** label-replicas, with each individual entry.

3 . . . Print name and address of the store from which you bought **Chicken of the Sea Brand Tuna** or **White Star Tuna,** together with the price you paid per can. This must be included with each entry.

4 . . . Write your headline about the brand of tuna that you buy—either **Chicken of the Sea Brand Tuna** or **White Star Tuna**—but **not** about both of them. In other words, write your headline as if only one of these two famous brands of tuna was illustrated in the above picture.

5 . . . 500 Weekly Qualifying Prizes will be awarded and distributed by an impartial board of judges, appointed by Van Camp Sea Food Company, Inc. At the end of the 36 weeks of contest, the judges will select the 203 Capital Cash Prize winners **exclusively** from the list of Weekly Qualifying Prize winners, and the awards will be made as Christmas presents! In the event of ties for any prizes, duplicate awards will be given.

6 . . . Contest begins Sunday, February 23, 1936 . . . closes Sunday, October 25, 1936. All submissions become the property of this company. Address your entry to Contest Dept., VAN CAMP SEA FOOD COMPANY, INC., Terminal Island, Calif.

HYGEIA, the Health Magazine, is published monthly by the American Medical Association, 535 North Dearborn Street, Chicago, Ill. Yearly subscription price, $2.50; for foreign postage add 75 cents. Volume 14, Number 3. Entered as second-class matter March 21, 1923, at the postoffice at Chicago, Ill., under the Acts of March 3, 1879. Acceptance for mailing at special rate of postage provided for in Section 1,103 Act of October 3, 1917, authorized March 21, 1923.

This man is Medicine's greatest problem

THIS man is Medicine's greatest problem. He is not the victim of a strange or baffling disease. He is just the *average* man.

The greatest problem Medicine faces today is to get the average person to take advantage, *in time*, of the help it has to offer him.

One need not look far to find proof of this statement—*tragic* proof.

A child lies ill with diphtheria, a disease which practically never occurs in children who have been given immunizing treatment and tested for immunity.

A pretty young girl sits, day after day, in her wheel-chair, far away from the parties and fun that are every girl's right. She has tuberculosis, which could have been arrested without difficulty if the family physician had been consulted when her first symptoms appeared.

An elderly woman comes to the doctor with something that has been troubling her for some time. He shakes his head sadly as he discovers an advanced cancerous growth. She would have had good prospects for cure if she had come to his office when her suspicions were first aroused.

A business man in the prime of life dies in his office. His heart had been giving him warnings for more than a year, but he was "too busy" to heed them.

Yes, Medicine's greatest problem is to get people to take advantage of the help it can offer them. And *you* are the only one who can solve that problem. When something is wrong within your body, you are usually given some warning signal. *Act* on that warning by consulting your doctor without delay.

PARKE, DAVIS & COMPANY

DETROIT, MICHIGAN

The World's Largest Makers of Pharmaceutical and Biological Products

MARCH 1936

"The Story of Louis Pasteur"

ELSEWHERE in this issue of HYGEIA appear some photographs taken from the motion picture "The Story of Louis Pasteur," which Warner Brothers are at this time displaying throughout the United States. The life of Pasteur has been described in innumerable books and magazine articles. It has been dramatized by the Guitrys, and from this drama a motion picture was made some years ago by a French film producer. No doubt, the best available life of Pasteur for the average reader is that written by his nephew, Pasteur Vallery-Radot. There is also a dramatic sketch of the great master in Paul DeKruif's "Microbe Hunters." A brief synopsis of the life of Pasteur, written by the Editor of HYGEIA, is available in the Haldeman-Julius Blue Book series, which sell for five cents.

In "The Story of Louis Pasteur," now being exhibited as a talking motion picture, the dramatic qualities of the life of the great founder of modern bacteriology and preventive medicine are beautifully presented. It is no secret that Pasteur was opposed vigorously by certain members of the French Academy of Medicine and by other scientists who refused to accept the idea of the germ causation of disease. Nevertheless, when Pasteur had finally proved his contention by suitably controlled scientific experiments, they enthusiastically endorsed his point of view and participated in the celebrations of recognition. Indeed, it is one of the virtues of scientific medicine that it is ready to use contributions from any source, whenever the evidence is sufficient to warrant acceptance. As Oliver Wendell Holmes said, "Medicine learned from a Jesuit how to cure agues, from a friar how to cut for the stone, from a soldier how to treat gout, from a sailor how to keep off scurvy, from a postmaster how to sound the Eustachian tubes, from a dairy maid how to prevent smallpox, and from an old market woman how to catch the itch insect."

OF COURSE, it is necessary in a drama to have a hero and a villain. In creating a villain for "The Story of Louis Pasteur," the dramatist had to select the physicians who opposed the investigator. They are personified in a mythical "Dr. Charbonnet."

EDITORIAL

There is danger in the fact that some people may feel themselves warranted in trying weird, unestablished remedies for cancer, paralysis and incurable diseases for which their physicians cannot produce a cure, simply because the picture may give them the impression that the medical profession is constantly opposing new methods out of pure stubbornness or even out of jealousy.

As the picture proceeds, those familiar with the details of the life of Pasteur will realize that a number of liberties have been taken. Thus he is presented with a handsome blond daughter, who marries one of his assistants. When she is about to give birth to a child the great Pasteur is caused to sign a document renouncing his discoveries. This is purely a figment of the imagination of the scenario writer.

Later, Pasteur instructs Dr. Charbonnet how to observe asepsis in the delivery of the child, also wholly imaginary. In the film, Pasteur is visited by Lister on several occasions, when, of course, these visits never actually occurred. Lister was in intimate contact with Pasteur's work and wrote him letters which, no doubt, form the basis of the speeches he makes in the film. In the Pasteur laboratory, as shown in the film, microscopes and bacteriologic apparatus are used which were not available until long after the time when Pasteur is shown to be using them. These are, however, but minor points of criticism in the light of the manner in which the film definitely establishes for the average observer the veracity of the germ conception of disease causation and also of the manner in which the film demonstrates the spirit of research as exemplified by Pasteur.

Those who have read Vallery-Radot's sympathetic life of the founder of bacteriology have no doubt created in their minds a picture of the man. They will find him made animate by Paul Muni so veraciously that they will seem to be observing Pasteur himself. The dramatic qualities of the great experiment with sheep inoculated against anthrax are brilliantly developed by the producer. Indeed, audiences are on the point of cheering when success crowns the investigator's efforts.

The producer was at great pains to duplicate the scenery of France, particularly the area around Arbois. It is unfortunate that he did not take greater pains to weave into the story more accuracy in the reproduction of the bacteriologic and medical scenes. As a step in the production of a biographic-medical film, this constitutes a tremendous advance over any previous effort in this field.

Cancer Is Curable

An Article in Which GEORGE GELLHORN Tells What Every One Should Know About This Baffling Disease

THE MESSAGE of hope which modern medicine can give to humanity is: *Cancer is curable.* Some persons still retain the impression that cancer can never be remedied. To be sure, not every case of cancer can be cured, just as not every case of pneumonia or diphtheria can be healed. It is of primary importance that every one understand what cancer really is.

There are still many persons who believe that cancer is a crablike animal with claws and teeth that somehow gets into the body and then eats its way through the tissues. To explain this fallacy it is necessary to go back more than a hundred years to the time when a botanist in Germany discovered that the bodies of plants were made up of innumerable tiny units or compartments, called cells. A few years later it was found that the bodies of animals and man were also composed of untold billions of such cells, just as a wall is made up of units, called bricks. There are many varieties of cells which differ in size and shape but are always so small that they cannot be seen unless they are magnified about 400 times. Under normal conditions all cells live in a well ordered arrangement, no cell encroaching on another and no group or variety of cells growing in excess of any other group of cells and thereby disturbing the harmony of the whole.

CANCER IS CURABLE PROVIDED THE RIGHT KIND OF TREATMENT IS GIVEN SOON ENOUGH. IT IS ALSO OBVIOUS THAT THE DOCTOR CANNOT DO HIS PART IF THE PATIENT DOES NOT CONSULT HIM IN TIME. GO TO YOUR DOCTOR PROMPTLY.

Sometimes, however, and for no known reason, some of these minute cells go on a rampage; they multiply and develop much faster than any of the surrounding cells; they spread in every direction and destroy any cells that may be in their way. Soon they form little lumps in the body. Some of these, when first noticed, may not be larger than poppy seeds; but their growth never stops, and in a short time the little lump develops into a considerable mass.

WHILE this increase in size is going on, other cells force their way into a blood vessel and are carried by the blood stream into distant parts of the body where they settle down and repeat exactly the same process of growth and destruction. This rapid and limitless growth, the destruction of neighboring tissues and the invasion of other parts of the body, is known as cancer.

A cancer may be on the outside and visible, or it may be hidden in the depths of the body. Its discovery is a matter of chance, because when first perceptible to sight or touch, a cancer looks perfectly harmless and does not cause pain or other symptoms. In every case, however, the enlargement will sooner or later break down and turn into an open sore or ulcer which resists all the ordinary methods of treatment and steadily increases in size and depth. Bleeding will then occur, in some cases slight but increasing in time and in other cases abundant from the very first. Between such irregular hemorrhages there may be a copious discharge, often of an offensive odor. Gradually pain will be felt, perhaps only indistinct and dull in the beginning but becoming sharper and sharper every week until it is altogether intolerable. At the same time the patient's general health begins to suffer. There is loss of weight and strength; the color of the face fades; the skin becomes dry and wrinkled, and the sleepless hours of the nights spent in pain rob the eyes of their luster.

It is not necessary to describe the suffering in greater detail or to point out that death is the outcome in every case not properly treated, because cancer is so common a disease that there is hardly a single family in the land in which such cases have not been observed.

CANCER is occurring even more frequently than formerly. Vital statistics in every civilized country of the globe show a steady increase from year to year, from decade to decade.

What makes this increasing frequency particularly depressing is the present complete ignorance of the cause of cancer. In thousands of laboratories and hospitals all over the world, men have studied the question indefatigably, but no one has yet been able to find the right answer. Yet little by little the veil that surrounds the mystery of the origin of the disease is being lifted. Some day the cause of cancer will be discovered just as the causes of many other diseases which have baffled mankind have been found.

No age is safe from cancer. Even children are subject to certain forms of it; but in the great majority of cases it afflicts men and women who are past middle age. They may have a long life full of hard work behind them and be in the best of health and ready to enjoy a well earned rest when they are stricken by cancer. Fortunately the families of such patients need not fear that the disease is catching. It has been positively established that cancer is not contagious. It cannot be carried from one person to another. Not a single instance is known in which a doctor or a nurse has acquired

cancer in the course of professional duties. It is also quite unnecessary to fear that one may inherit cancer. That fear has haunted the lives of many persons. From recent investigations it seems probable that cancer is inherited in mice; but this does not apply to man, and no scientific proof as yet exists to show that cancer is handed down from one generation to the next.

On the subject of popular misconceptions it should also be said that there is nothing disgraceful about having a case of cancer in one's family. Not so long ago many persons were ashamed to admit the existence of that affliction and for that reason hesitated to call in medical aid.

What the patient and his family should know first and foremost is that cancer is not at all the hopeless disease which it was only a few years ago.

THERE are three methods of treatment—and three only; namely, surgical operation, radium and x-rays. Each of these methods is suitable only for a definite kind of case; sometimes it is well to use them in combination. No two cases of cancer are alike, and only an experienced physician can tell which of the three methods would be best suited in a given case. Under no circumstances is it wise to select for the treatment a medical or nonmedical person who claims to possess a secret cure for cancer.

At recent medical meetings many thousands of cases of cancer which had actually and permanently been cured by means of surgery, radium or x-rays were put on record. The figures presented showed that in cancer of the stomach 20 per cent of the patients were cured; in cancer of the womb 25 per cent, and in cancer of the rectum 55 per cent were made well again.

The reason why the patients were not cured in every instance lay in the fact that they had waited too long before consulting their doctors. Almost without exception, in those who were cured the cancer had been present only a comparatively short time. In other words, the sooner proper treatment is instituted in cancer, the better are the final results. In breast cancer, for example, 70 per cent of the patients can be cured if the operation is performed in the early stage of the disease, and only 4 per cent if the patient has delayed applying for treatment.

It follows that cancer is curable *provided* the right kind of treatment is given soon enough. It is also obvious that the doctor cannot do his part if the patient does not consult him in time. Go to your doctor promptly if you observe anything wrong with your health. But how is a layman to know or suspect that something may be wrong? Fortunately there are certain danger signals which may help him to recognize the disease early enough, before it is too late. A sore anywhere on the body which shows no tendency to heal within a week is suggestive of cancer. Any abnormal thickening or swelling which the patient can feel or see may be caused by cancer. Continuous indigestion with or without vomiting may camouflage a cancer of the stomach or intestines. Blood in the urine may be the first sign of cancer of the bladder or kidneys, just as abnormal bleeding or discharge is the first indication of cancer in most other organs. Of course, these signs or symptoms are not conclusive and may be produced by other less serious causes. Yet only the medical expert can make the diagnosis, and he can do so only after a thorough examination.

Unfortunately most patients are all too prone to postpone consultation, at least as long as there is no pain. In this respect, women are usually the worst offenders. Delay increases the danger a thousandfold. *There is never any pain in the early stage, when cancer is still curable.* A patient who has noticed any of these so-called danger signs should seek and even insist on an immediate and thorough examination.

Since cancer is such a common disease, is there no way of finding out about it even before one becomes suspicious? Yes, there is a way, and a very simple one. All doctors ask is that laymen pay as much attention to their bodies as they do to their automobiles. Most persons do not wait until their cars begin to rattle; they have them looked over every two or three thousand miles. If people would undergo a thorough examination every six or twelve months even if they feel quite well, much trouble could be prevented. New and refined methods of diagnosis are constantly being discovered, and cancer can often be recognized long before the attention of the patient is aroused. Minor disorders can also be detected which may possibly turn into cancer if they are left untreated. This is a practical application of the old saying, "an ounce of prevention is worth a pound of cure."

ONE might quite justifiably object that such continued emphasis on cancer will create a cancer scare. What of it? Scare never produces cancer. Is it not better to be afraid of cancer than to have cancer? If regular examinations actually reveal cancer, then the patient has the best chance of being cured. If they fail to show any signs of cancer, then the patient's mind should be relieved of all anxiety.

Modern doctors have known all these things about cancer for many years and have tried in every possible way to improve conditions; but they realize that all their efforts do not amount to much unless they have the wholehearted support of the public. That is why they ask public cooperation and urge every one to become their partners in fighting this dreadful disease and to remember that *cancer is curable.*

Century

THEN CAME THE WHITE MAN, THIRSTING FOR RICHES OF THIS WORLD OR THE NEXT, OR OPPRESSED BY HIS DUTY TO SAVE SOULS.

How Disease Came with the White Man

A Story of Early Medical Milestones in America

By P. M. ASHBURN

MEDICAL HISTORY has too often been written as a biographic and bibliographic record of physicians of the past who are monumented by their errors as often as by their real contributions to medical progress. Usually the medical and the general historian either neglect or ignore the influence of disease on history, or they tend to exaggerate it. Among the serious efforts to deal with the subject are the writings of Jones, Ross and Kellet on malaria in Greece and Rome, Dr. Henry R. Carter's history of yellow fever and Dr. Hans Zinsser's "Rats, Lice and History," dealing with typhus fever.

Several years' study of the medical history of the conquest of America and of accounts left by early explorers and historians, Spanish, Portuguese, French and English, has convinced me that prior to the coming of the white man and the Negro, America was a land almost free from infectious diseases. Death on the wholesale scale came only from war, drought, flood and famine, and on the small scale mainly from accidents and injuries, the mishaps and complications of child-bearing, the sacrifice of captives and old age.

Then came the white man, thirsting for the riches of this world or the next, sometimes insatiably greedy and cruel, sometimes a zealot, narrow, bigoted and oppressed by his duty to save souls. He was speedily followed by his black slave, and both brought diseases to which the Indian had neither natural nor acquired immunity and to which his unresisting body served for fuel, as straw or fat pine to fire. Arcady was no more. Death stalked from Canada to Patagonia, pestilence walked in darkness, and destruction wasted at noonday. This was medical history writ large, the greatest mobilization of disease of which we know; but it has been almost entirely ignored.

GENERAL HISTORY

The outstanding result of the conquest was the rapid disappearance of the Indians from Canada to the Argentine. In the sixteenth century the process was largely limited to the Spanish-American countries, as the French and English had not yet established successful settle-

ments. Before the middle of the century the Indian had largely or wholly disappeared from the West Indies and much of coastal or lowland Central and South America.

The literature of the Spanish conquest teems with discussions of the causes. Herrera attributed it to measles, smallpox, catarrhs, bloody flux and great fevers; Fray Motolinia to smallpox, measles, war, famine and oppression. The Bishop of Santo Domingo wrote to the king in 1551: "But in conclusion I would say one thing, and it is that this land and all others which have been or may be discovered are so unfortunate that it is not within the hands of man to give them perpetuity, but God rather permits that the prince and his governors, wishing to benefit, destroy; wishing to enrich, they impoverish; wishing to perpetuate, they depopulate; wishing to give life to the Indians, they kill them; and wishing to increase the King's rentals, they diminish them." Oviedo stated that in the year 1541 there were not believed to be in Santo Domingo 500 persons of the original stock, which was estimated at more than a million at the time of the first Spanish settlement. Although Oviedo declared that many diseases, especially a certain pestilential smallpox, were so prevalent that in a short time the Indians would be no more, he attributed the decrease to God's having repented of making such ugly, vile and sinful people, and felt that it was His will that they should die.

The population of Peru was estimated at 10 million at the time of the conquest. A census of 1548-1553 placed it at 8,285,000, and another in 1791 showed but 1,076,122. The reduction was attributed to the hard conditions of life and to the influx of new diseases, especially smallpox. In September 1531, a decade after the conquest of Mexico, the president of the Audiencia Real wrote to the king that the population had diminished one third.

William Bradford and Increase Mather tell similar stories of New England. Thomas Hariot wrote of the Roanoke Island settlement: "There was no town where they (the Indians) had practiced any villainy against us but within a few days after our departure they began to dye; in some towns twenty, in some forty, in some sixty, and in one an hundred and twenty, which was very many in respect to their numbers."

Despite the fact that the Indians died off so rapidly, there is abundant evidence that every part of America when first seen was healthful,

Ewing Galloway

THERE IS ABUNDANT EVIDENCE THAT EVERY PART OF AMERICA WHEN FIRST SEEN WAS HEALTHFUL, AND MANY PARTS LATER ABANDONED AS PESTILENTIAL THEN TEEMED WITH HEALTHY POPULATION. SMALLPOX WAS SOON TO RAVAGE THE NEW WORLD.

and many parts, later abandoned as pestilential, then teemed with healthy population. Charles Darwin, keen observer and great deducer of natural laws, noted the severity of diseases introduced to newly discovered peoples and the disappearance of one race before another. Writing before the time of Pasteur, he agreed with the conclusion of another writer that "it would appear as if the effluvium of one set of men shut up [on shipboard] for some time together was poisonous when inhaled by others; and possibly moreso if the men be of different race."

MEDICINE

As Darwin could not foresee the future advances of medicine, neither could other, lesser, earlier and more ignorant men, and as it is only from such sources that we must derive our knowledge of the conquest, it is desirable that we glance at the state of medicine, by the light of which they judged medical events.

In general it was still the medicine of Galen, the great teacher whose dicta were yet accepted with almost as much reverence as the Bible, although they were altered and often corrupted by translation from Greek to Persian and Arabic and thence to Latin, and were mingled with astrology, alchemy and religious superstition. So great was Galen's prestige even after Harvey described the circulation of the blood, that Jean Riolan, physician to Louis XIII and the queen mother, contended that if Harvey's dissections did not really agree with Galen's teachings, then the structure of man had changed since Galen's day, for it could not be admitted that he had erred.

This Galenic medicine taught that all things were composed of the four elements, heat, cold, moisture and dryness, and that each, including persons, drugs and diseases, had its peculiar complexion derived from the mixture of these qualities and the preponderance of one or more. There were also four humors in the body, blood, bile, phlegm and black bile. Of these, blood was hot and moist, bile hot and dry, phlegm moist and cold, and melancholy (black bile) cold and dry. The four virtues, vital, animal, nutritive and reproductive, dwelt in the heart, the brain, the liver and the genitals, respectively. Their proper instrument was the spirit, a thin body and vapor having its seat in the heart and spreading thence through the veins and carrying heat to the members. Quartan fever came from black bile; if there was phlegm the disease was colder; if bile, there were rigors. If bile putrefied in remote veins it caused a tertian intermittent; if there was phlegm mixed with it there was continued fever; if the putrefaction occurred near the heart the result was the causus, or ardent fever.

It was Galen's dictum that opposites neutralized one another and that a hot, dry disease required a cold, moist remedy. Three centuries after the discovery of America, Hahnemann announced his dictum that like cures like, *similia similibus curantur*, contradicting Galen and throwing the medical world into a bitter and century long quarrel as to which of these two bits of scholastic folly was the true law and gospel.

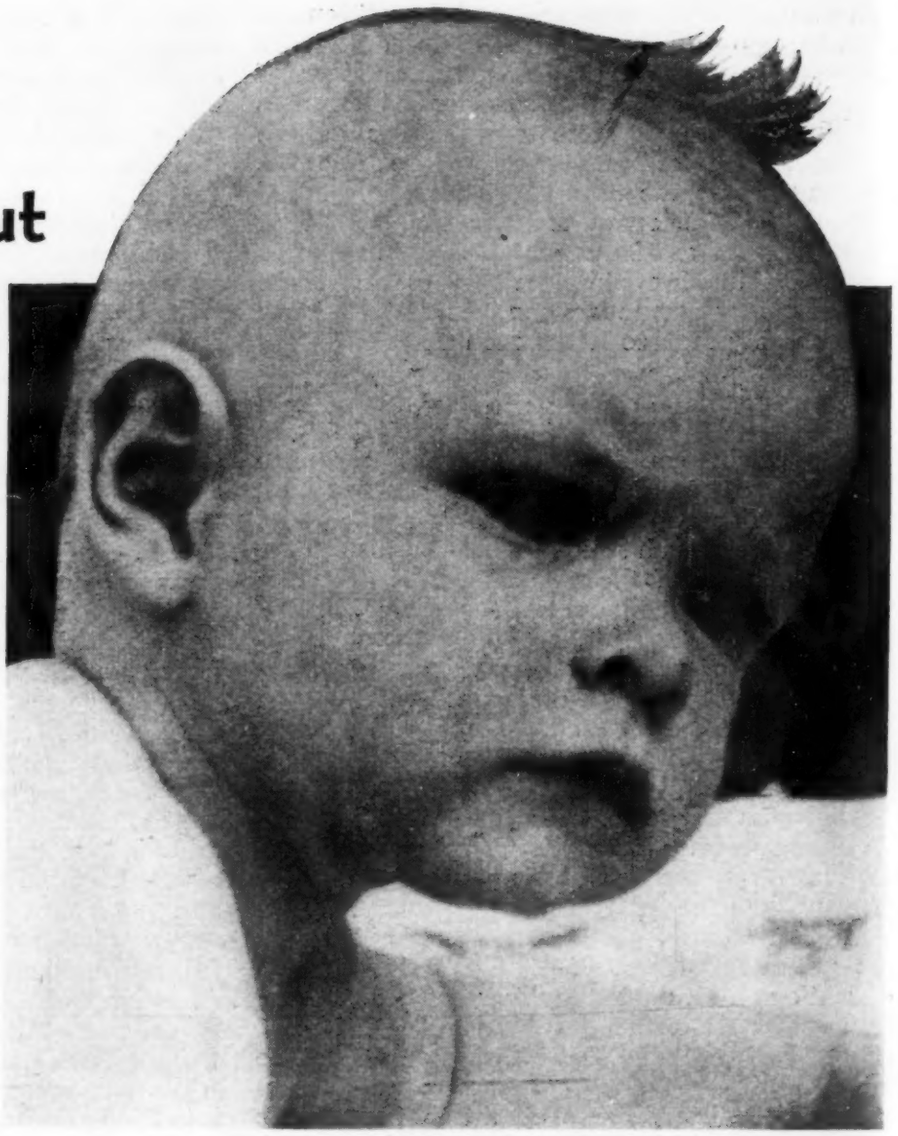
The state of medicine may be summarized in the statement that it was almost the end of the sixteenth century when Pope Sixtus IV first authorized the study of anatomy on the cadaver. Nobody knew that the blood circulated prior to Harvey's publication in 1628, and few believed it afterward. Many learned and prominent men did not know that syphilis and gonorrhea were transmitted by sexual intercourse. Quinine was unknown, and sarsaparilla was a wonderful remedy. Astrology and magic were in strong favor. Nicholas Culpepper, in his famous "Key to Galen's Method of Physick," published in London thirty years after Harvey described the circulation, gives the following discussion on physiology and medicine:

"The heart is the seat of the vital spirit, the fountain of life, the original of infused heat and the natural affections of man. So then, these two things are proper to the heart, (1) By its heat to cherish life throughout the body, (2) To add vigor to the affections. The heart is chiefly afflicted by too much heat, by Poyson, and by stinking Vapors, and these are remidied by the second sort of cordials. . . . The infirmities usually incident to the stomach are three, (1) Appetite lost, (2) Digestion weakened, (3) The retentive Faculty corrupted. . . . The office [of the liver] is to concoct Chyle, which is a white substance the stomach digests food into, into Blood and distribute it by the veins to every part of the Body, whereby the Body is nourished and decaying flesh restored. . . . In the breeding of Blood are three Excrements most conspicuous, viz., Urine, Choller and Melancholy. The proper seat of Choller is in the Gall. The Urine passeth down to the Reins or Kidneys, which is all one. The Spleen taketh the thickest or Melancholy blood to itself. The office of the Reins is to make a separation of the Blood and Urine: to receive this urine is the Bladder ordained; which is of a sufficient size to contain it. . . . As for the nature of the Womb, it seems to be much like the nature of the brain and stomach, for experience teacheth that it is delighted with sweet and Aromatical Medicines, and flies from their contraries. For example; A Woman being troubled with fits of the mother, which is drawing the womb upward, apply sweet things as Civet, or the like, to the place of conception, it draws it down again; but apply stinking things to the nose, Asafoetida or the like, it expels it from it, and sends it down to its proper place."

Such was the medicine of the time of the conquest.

(To be continued)

Some Facts and Fancies About BABIES



By
Emelyn L. Coolidge

A CORRESPONDENCE with mothers, covering many years and embracing every state in the Union as well as other countries, frequently reveals some astonishing theories. Young mothers are becoming educated rapidly, but there are still many who hold to old ideas and superstitions and become really worried about some of these fancies.

That there is danger of "marking the baby" is one of the ideas many mothers still seem to have; sometimes they describe it as "maternal impressions" or "birthmarks." They think they may injure the coming child through some harmful impression. One old but still prevalent fancy is that if an expectant mother sees a rabbit the child will be marked with a harelip! "Cravings" for certain food because the mother wanted a special article of diet before the child was born are still credited to prenatal influences by some mothers who have heard such ideas discussed by women usually of a much older generation than themselves.

Scientific knowledge has proved that there is no possibility of the baby's being marked or of the mother's cravings having any effect on the baby before birth. She may harm her baby, however, by giving way to nervousness and worry instead of being happy and calm. This nervous worry is exceedingly bad for the milk supply, sometimes making it impossible to nurse the infant successfully.

An expectant mother or a mother with a new baby should live a normal, happy life, paying no attention to old-fashioned tales if she happens to hear them. If she remains calm and is reasonably healthy the chances are that she will be able to nurse her infant and that all will be well for both mother and baby.

ANOTHER idea still held by some mothers is that a baby born at 8 months is less likely to live than one born at 7 months. Premature babies are sometimes delicate and require special care, but the 8 month infant is stronger than the 7 month baby because he is nearer the 9 month full term. His development is more nearly completed, he usually weighs more and is therefore easier to feed and care for than the smaller infant.

That all very young infants must break out with a rash which many persons still call hives is another fancy still held by some young mothers. They even worry considerably if the baby has not had such an eruption!

"Hives" may result from incorrect diet, sometimes from breast milk that is too rich in fat

for the baby or from too frequent nursing. Too much fat or sugar in the formula for bottle-fed babies may be the cause of a digestive skin eruption. Real hives, medically known as urticaria, has quite a different appearance from the so-called hives of new-born infants. It is not at all necessary or desirable for young infants to have skin eruptions.

In one part of the South there is a disease which some mothers speak of as boll hives. It is described as "sort of a breaking out under the skin, causing the child to turn very dark just before death." The natives of the country where boll hives is seen claim that if the babies are scarified they will never have boll hives. To scarify, a cross is cut on the baby's back with a razor; a drop of this blood is drawn and given the baby to swallow!

Just what this disease is, medically, is difficult to say from the description given by mothers. Possibly it is like the disease doctors call purpura hemorrhagica, which is characterized by hemorrhages into the skin.

Almost too old-fashioned to mention, but still heard of occasionally, is the idea that a baby must be "liver grown." Just what is meant by this term is difficult to determine, and mothers themselves seem exceedingly vague. New-born babies are often jaundiced or somewhat yellow for a few days, but unless there is some malformation of the bile ducts or other defect this condition is perfectly normal and will clear up by itself. When it does not, the family doctor will understand what is wrong and take means to correct it.

That vomiting is a "healthy" sign and should be allowed to continue until it stops of itself is a more prevalent fancy than one would suppose in these enlightened days. Throwing up food is never healthy. There is some cause for this, and it should be found and corrected as early as possible. The baby may be taking too large a quantity of food at each meal; the meal hours may be too near together; the milk may be too rich for him to digest, or there may be too much sugar in the formula; something may be causing gas; bands may be too tight, or perhaps the infant is handled too soon after feeding. Spasm or obstruction at the outlet of the stomach may be present in either breast-fed or bottle-fed babies. Something is wrong when an infant vomits frequently, and the earlier it is discovered just what this trouble is, the better for the baby. In some severe cases even the child's life may be at stake. Therefore the mother with a vomiting baby should consult her doctor at once and never let the condition go on, thinking it is just a "healthy sign."

Numerous ideas about teething are still frequently found among inexperienced mothers. Some think that diarrhea is perfectly natural while a baby is teething and allow this dangerous trouble to continue without doing anything to correct it. Even today, constipation, vomiting, failure to gain in weight, "teething rashes" and colds are all attributed to "only teething" in many cases. While teething may cause some restless days and nights, possibly slight indigestion and some temperature, all these symptoms are of short duration. Causes other than teething should immediately be looked for and corrected before too much harm is done. Giving plenty of boiled water and stopping the usual food for a day while the digestive organs rest is always safe until the family doctor can determine the real cause of the disturbance. Delay only makes matters worse.

Wearing a string of beads, sometimes called "Job's Tears," to make teething easier is fortunately found only rarely nowadays. A bag of camphor worn around the baby's neck or pinned onto the clothes is also occasionally seen. This is supposed to keep contagious diseases away! Fortunately widespread information about inoculations and vaccinations is educating mothers to such an extent that the camphor idea will soon be out of existence.

Another harmful fancy still in vogue is that the baby should never go out without having the face covered until he is at least several months old. How can he get enough sunshine and fresh air if the nose and mouth are covered? When it is so cold or windy as to make it necessary to protect the baby's face he is better off in his own nursery. When he goes out let him get the full benefit of the refreshing air.

Mothers still write to know whether it is not better to bite off the nails of young babies rather than to cut them. Nails should be cut with scissors having rounded ends, so no harm can possibly be done if the baby jumps during the process. When the nails are not kept fairly short the baby is apt to scratch his face. Long nails are also difficult to keep clean. Filing a tiny baby's nails is rather difficult.

Having read and answered more than 300,000 letters from mothers during the past ten years, it is most interesting to note how much more competent are the young mothers of today than were those of a decade ago. To the past belongs that mother who wanted to know whether the present year was one in which lions had their babies, for she had been told that this only happened once in three years and that human babies born at that time were much more difficult to bring into the world than those born in other years!

Mothers of today ask about vitamins A, B, C and D, sun baths, and the prevention of nutritional and infectious diseases. Several popular magazines have played a large part in educating these mothers, many of whom are out of reach of lectures on child welfare and other helps of this kind.

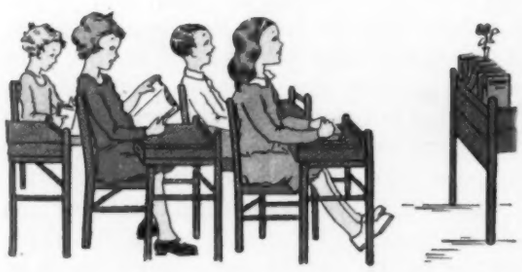
STEPS IN THE DETECTION AND ALLEVIATION OF DEAFNESS

Will your children join in childhood games or will they become playtime outcasts and be called dull and stupid because of increasing deafness?

To The Family Doctor:

Watch hearing acuity during and after childhood diseases such as Scarlet Fever, Measles, Diphtheria, Typhoid Fever, Meningitis, Mumps, Common Colds.

STEP ONE

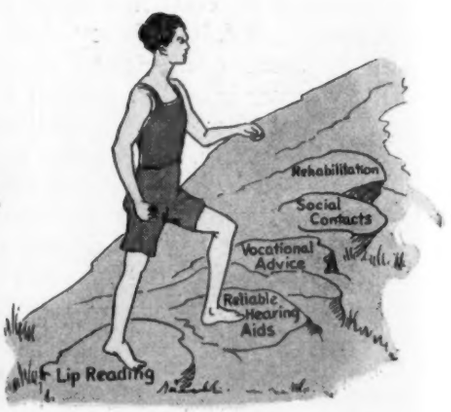


Keep slightly hard of hearing children in classes with normal hearing children for regular school work.

STEP FIVE

Help them to grow into self-supporting, self-respecting citizens.

STEP SIX



Make stepping stones of the aids offered a deafened person.

STEP SEVEN

Find the hard of hearing school child by accurate tests, scientifically conducted. Three Million School Children With Measurable Hearing Defects!

STEP TWO

Send children having a hearing loss to a Doctor or School Clinic.

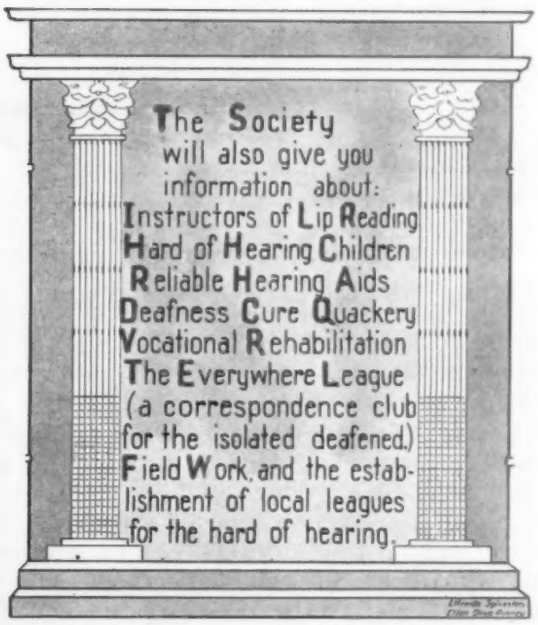
STEP THREE

Provide lip reading instruction for hard of hearing children.

STEP FOUR

Visit a local organization for the hard of hearing where advice and suggestions will be given.

STEP EIGHT



STEP NINE

"THERE ARE none so deaf as those that will not hear"; but for those who take the precautionary measures necessary for the detection and alleviation of deafness, help is available.

This poster, which shows the essential steps leading to conservation of hearing, is reproduced through courtesy of the American Society for the Hard of Hearing, Washington, D. C.

It was planned by Ada M. Hill, director of the department of exhibits of that society, and is one of the measures for furthering the purposes of the organization: "To act in the national and international fields of social work for the deafened; to encourage the founding of local organizations; to spread national propaganda in the interests of the deafened and in the prevention of deafness."

THE BACKWARD CHILD

The Teacher Looks Behind the Wall of the Retarded Mind

By

ELIZABETH HESTER

LIKE SIMPLE SIMON HE GOES FISHING, BUT WITH THE END OF A LITTLE GIRL'S BRAID IN HIS INK WELL. HE HAS NOTHING TO DO THE WHOLE DAY LONG BUT GET INTO TROUBLE.

"THE IDEA of the finality of natural gifts, which until recently was regarded as an unshakable truth, has been very much shaken. More than this, all practical results go to show that the solution will be found in the direction of practice and training; for the experiences of investigators agree in showing that those who are inferior at first come very near to the best after thorough practice."

The truth of this idea, advanced by an educator, has been proved to an amazing degree in a midwestern school system, which set aside fourteen rooms for the training of the child of subnormal mind, the atypical child, more familiarly known as the backward child.

Just over the high stone wall of a retarded mind one may catch glimpses of beauty, shining bits of the green and gold of understanding and comprehension whose condition arouses in the understanding observer a keen desire to reach and develop these faculties. For him who has succeeded in passing beyond the wall and reaching these promising gifts there is a pleasure amounting almost to a thrill. The many hours of patient labor, encouragement and inspiration may be greatly rewarded when the handicapped child finds himself able to cooperate with the instructor to the extent that he can produce some finished piece of work equal to that done by a child of normal mind. However, his pleasure in the accomplishment far surpasses that of the normal child, usually because his achievements are so few and far between. Word-blindness may add to the height of the child's stone wall. Consequently books and pencils mean nothing to him but trouble and are in fact intensely embarrassing and irritating to him. Even though he may be able to read a little a class of normal children will have read a problem, worked it out and be ready for another before he will have completed one sentence. He finds himself so far behind the others that he is in a constant state of confusion and bewilderment. Fear develops, followed by hate of his instructor and schoolmates. Simple Simon fishing in a bucket could create no more disturbance than the idle atypical boy in a room of normal children, especially if he is given the amount of freedom that is found in special rooms. He really does go fishing, but with the end of a little girl's braid in his ink well. His restless hands find pins to bend, not to use in fishing but to place in the toe of a shoe with which he punctures the anatomy of a little boy just ahead of him. He has nothing to do the whole day long but get into trouble at school as well as at home and on the street.

THE public and private school systems of every county, township and city have this problem-child question to solve. The insane child and the idiot are usually the problems of the home or state, not of the school system. It is the off-type, the one who looks so much like

the rest of us, whose educational problem must be solved with reference to his ability. This must be done most carefully, both from the educational and the financial standpoint.

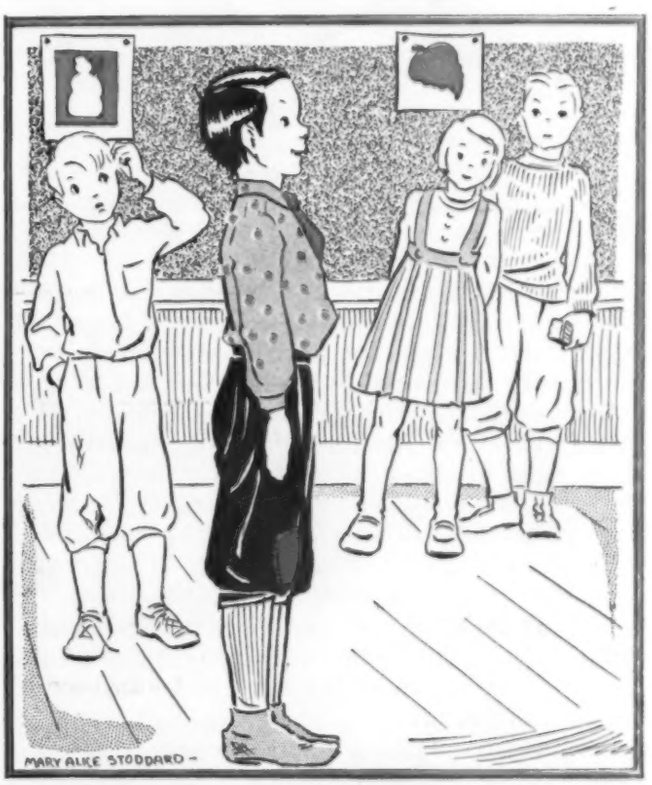
In the typical schoolroom the atypical child is not only a very disturbing person but a very sad and depressed one. When he says with tears in his eyes that he is in this special room because he is "so dumb," one begins to realize that such a child has never experienced success similar to that of boys his age chronologically. He does not experience even little successes, the small daily occurrences so often enjoyed by normal boys, unless, of course, he has joined a night gang of auto-stealing young ruffians. Few persons realize that such depredations can often be laid at the door of these social misfits who are only seeking their share of the stimulating psychologic effect of success.

To see a smiling boy fondly handle a rough wood rasp, intently examine the parts of a plane and then view the results of work done by the various tools in his hands, is to realize that in fitting education to him one must indeed employ "the learning by doing" method. Instructors of such children might change the following: "Discipline consists in producing and maintaining habits of thoughtful behavior," to read instead, "Discipline consists in producing and maintaining habits of constructive behavior." Discipline, that bugbear of inexperienced teachers, will then be reduced to a minimum. Success works that way. Self esteem and happiness begin to have effect on the children. Sullen, bewildered faces light up with smiles. When a boy reaches the point where he can figure accurately and independently the fit of a shelf and the mitering of a joint the glow in his eyes and the animated smile that greet those praising his work is another glimpse over the high stone wall. Then when the finished work, equal to that of normal boys, is displayed along with theirs, for all to see and admire, he seems to experience a rebirth, the changes in him are so profound. Modifications in his environment will surely follow. The objects he has made at school, pieces of home decoration, are like a welcome on the home doormat for him. His parents are surprised and pleased at what he has accomplished. He has become home-conscious.

As soon as a child becomes conscious of his environment his personal appearance improves. The completion of a stocking cap on a loom made one boy more conscious of his hair. Much to the gratification of every one, the most tousle headed boy had become the model of a room. His skin and clothing next came under his inspection. He washed and ironed his own shirts; he even wore a tie.

The next natural development to expect is that of parent-consciousness. One boy vowed that when he got out of school his mother was not going to scrub offices at night after working hard all day at home. Another boy came to school one morning in a very exalted condition. The world was a wonderful place; nothing could irritate him; he was a knight in shining armor. The night before he had collected food from his neighborhood to help out a destitute little mother. What was most surprising, he reported her condition to "friends uptown" who would help her out until she could secure employment. Another boy slammed into the room one morning, very late. He was still breathing hard, and his face was flushed and angry. The stress of his emotions finally brought forth a query, to which he answered that he had just given his older brother a "licking" for buying and drinking bootleg liquor.

ANOTHER morning found the room's gifted boy already at work on the arrival of the instructor. With his movable desk pulled into a well lighted corner and his back to the room he seemed completely lost in what he was doing. Even the children respected the warning of his back, "Please leave me alone." All morning he worked, not even stopping to eat lunch. Finally at 2 o'clock in the afternoon he turned around with a little chuckle and said, "Well, teacher, here it is! Here's the spirit of spring!" There modeled in clay sat the little god Pan cross-legged on a stump, pipes and all. The knowledge that the boy could not read and that he had correctly interpreted some picture accompanied by a story read by the teacher was another delightful glimpse over the wall, not to mention the fact that *(Continued on page 239)*



AS HE BECAME CONSCIOUS OF HIS ENVIRONMENT HIS PERSONAL APPEARANCE IMPROVED. HE BECAME THE MODEL OF THE ROOM. HE WASHED AND IRONED HIS OWN SHIRTS AND EVEN WORE A TIE.

THE BLUE MAN

By
Arthur William
Stillians

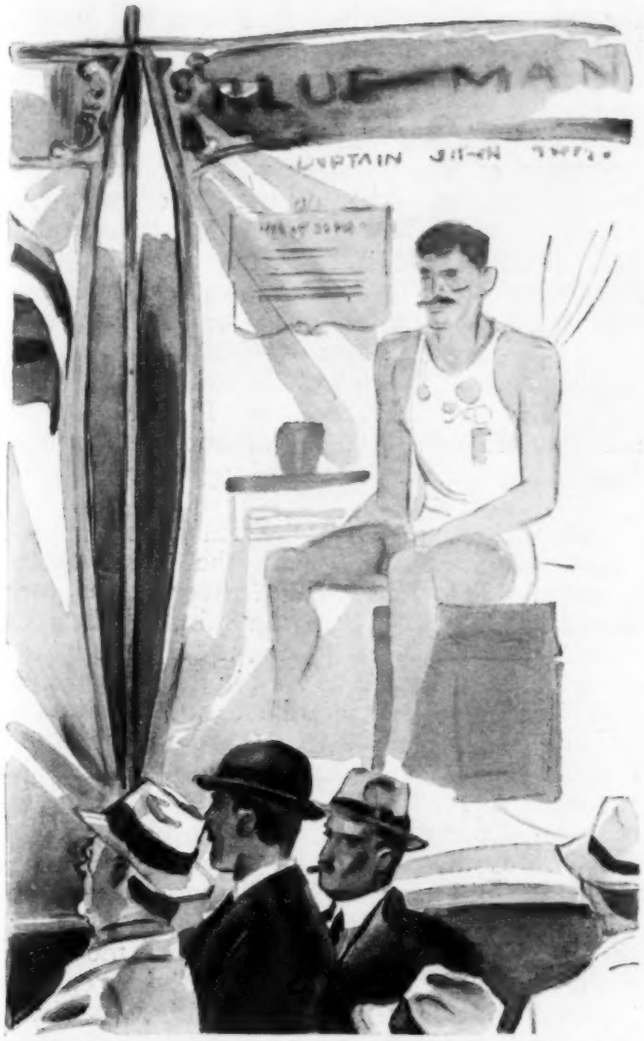
AMONG THE EXHIBITS IN THE SIDE SHOW OF A CIRCUS OR A FAIR THE "BLUE MAN" IS FREQUENTLY FOREAMS AND HANDS A FAIRLY DARK SLATE BLUE. HE IS A MAN WHO HAS PUT HIS SILVER INTO A BANK

AMONG the exhibits in the side show of a circus or a fair the "Blue Man" is frequently seen, his body a pale bluish color, his face, neck, forearms and hands a fairly dark slate blue. He is a man who has put his silver into a bank from which no withdrawals are permitted. In spite of that, he has learned to cash it for many times the value in currency. He is using a few grains of silver distributed throughout his skin to furnish him a livelihood, a form of practical high finance which is peculiar in that it does no harm to others.

This condition is called argyria or argyrosis, derived from *argentum,* the Latin word for silver. It really is a form of chronic poisoning though the patient has no bad effect except the change in the color of his skin. The texture of the skin is not affected.

Long before written history began, silver was used as money and for jewelry. It was known almost as early as gold, for which the ancients used the same sign as that used to signify the sun, a circle. The left half of the circle, a semicircle open toward the right, was their shorthand for silver. By adding a curve to the center of this semicircle, a crescent is formed. Whether for this reason or because of the silvery light of the moon, silver was named luna by the alchemists. Our words lunacy and lunatic, from the same source, are souvenirs of the old belief that the light of the moon caused insanity. "In the spring the young man's fancy lightly turns to thoughts of love." For this mild form of insanity we still say, "He's moonstruck."

SILVER nitrate, the soluble and therefore medically the most useful salt of silver, is still called "lunar caustic." It is no wonder that the alchemists reasoned that silver, the moon's element, ought to benefit insanity and other diseases of the nervous system for which the moon was held responsible, and for many years it was given for this purpose. Some of these nervous patients, after treatment for months or years,



SEEN, HIS BODY A PALE BLUISH COLOR, FACE, NECK, FROM WHICH NO WITHDRAWALS ARE PERMITTED.

began to turn an ashy gray and then a bluish color.

The same change of color occurred after the use of silver internally as treatment for ulcer of the stomach and other diseases of the stomach and intestines, a more recent and much more rational use of the metal. In spite of its helpfulness in some of these conditions, its use has been much lessened recently because of better methods of treatment and the danger of a permanent discoloration of the skin.

Another inorganic salt of silver is the chloride, the white precipitate which is obtained by putting a drop of solution of table salt into a solution of silver nitrate. This white deposit is insoluble in water. On standing in the light it turns dark. The bromide of silver is much more sensitive to light; therefore it can be used to coat photographic negatives. Most of the salts of silver have this tendency to be darkened by light. As all housewives know, silver itself is darkened by the air, probably by the minute amounts of sulphur in the air, so that all silverware has to be polished at intervals.

The Blue Man's skin is full of minute particles of some organic form of silver, the exact form not yet determined. These granules have the same sensitiveness to light and turn dark under its influence. This explains why the skin of exposed parts of the body, the face, neck, hands and forearms, becomes so much darker than the rest of the skin. Under the microscope these granules are seen as very small bodies most plentiful in the portion just below the epidermis and near the skin glands. Of the light that penetrates the translucent epidermis they reflect only the blue rays, concealing the red rays reflected by the blood and thus robbing the skin of its rosy, healthful appearance. There is still much to be discovered about argyria for the cases vary greatly. One person may take many times more silver than the next before showing any skin change, or one may show darkening of the skin in one portion of the body, while another may present a widely different picture. The gums are supposed to show a blue line as the first sign of argyria, but many cases with a marked discoloration of the skin fail to show any blue line on the gums. Sometimes post-mortem examination has shown that the internal organs have been heavily stained while the skin has remained normal.

The bones and muscles contain the chief deposits of silver; but the other organs have enough in them to make them very dark. A famous Blue Man, well known for many years in side show circles, was a former member of the British army. After his death the body was examined, and it was estimated that it contained a little over three ounces of silver.

SILVER, like aluminum and iron, differs from other metals in being nonirritating to tissue, at least in the organic combination in which it exists in the body. These people carry their silver about with them without any sign of poisoning other than the skin color.

So great is the danger of discoloration of the skin that silver preparations are now given internally only for short periods or not at all. Other less dangerous methods of treatment are usually chosen. For local application, however, silver preparations are still widely used. The most valuable service that silver performs is the prevention of blindness in new-born babies. A drop or two of a weak solution of silver nitrate in each eye soon after birth acts to prevent a disease quite prevalent in women which, by infecting babies' eyes during birth, has caused thousands of cases of blindness.

Since the discovery of the colloidal and organic forms of silver, solutions of which are mild antiseptics, the use of silver as a local application to the eye, nose, throat, urethra, bladder and vagina has increased. The com-

moner preparations are named silvol, neosilvol, argyrol, protargol, collargol, argyn and solargentum, each containing the root "arg" for *argentum* or "sil" for silver. Many persons have no idea that argyrol and the other preparations whose names are based on the Latin root contain silver. Under medical supervision these drugs may be used without danger. When they become household remedies, however, there is danger of serious consequences. Each time the eye is treated, a little of the solution trickles through the tear duct into the nose and is unconsciously swallowed. The same thing happens when the nose, mouth or throat is treated. The long continued use of a hair dye containing silver has been known to cause discoloration of the skin, which is not uncommon among those whose work consists in grinding or polishing silver or who work in air containing silver dust.

Local argyria occurs when the silver preparation penetrates the epidermis of the skin or mucous membrane and finds permanent lodging in the connective tissue foundations. This is seen most frequently about the eye, in the lower lid or in the white of the eye.

The use of silver preparations as household remedies carries a serious risk. Many persons think that if a little is good, much is better. Some have a constant fear of infection and a nervous urge to treat themselves. If they get the habit of using silver preparations, some of them will eventually notice the skin losing its fresh rosy hue and becoming a ghastly gray. Even though the use of the drug is at once stopped the change may go on and the skin turn blue under the action of light. Whenever mother suspects that one of the family "is going to come down with a cold" she is apt to run for the argyrol bottle and put drops in the patient's nose or throat. Some mothers are alarmed at every sneeze and dose their suffering offspring constantly. Several cases of argyria occurring in children have been reported recently.

Since the general use of the silver preparations as a household remedy has become popular, cases of argyria have increased in number. Every one can do his part to prevent their occurrence by using silver preparations only under the direction of the physician, and by warning friends and acquaintances of the danger of their careless, misdirected use.

The wise doctor, when ill, goes to one of his colleagues to be treated and follows orders. There is a saying that he who tries to treat himself has a fool for a doctor and a fool for a patient. This is because it is hard to judge one's own condition, hard to get the right perspective of the case. How much more important it is for the layman to protect himself by having the advice of the physician in the use of a drug such as silver, which may have such evil consequences, consequences that come on without warning and remain for life.

Many methods of treatment have been devised for this condition, but most of them are ineffectual. A boy of 14, however, who had a chronic ulcerative inflammation of the large intestine and whose growth had been stunted by the long continued illness, was successfully treated by irrigation of the intestine with a weak silver nitrate solution. After six months of treatment he was so much better that he left the hospital but continued the irrigations. After eighteen months of treatment, the intestinal condition was cured, but the boy's skin had become very dark. Six years later he had increased in height and had become quite stout. As a consequence his skin became much lighter in color, simply because a certain amount of silver had been stretched over a much larger area of skin.

Three discoveries have recently been made which are of great aid in the treatment of argyria: 1. The bad effect of silver, the deposits that change the color of the skin, can be seen with the skin microscope about the nails before the general effect can be seen in the complexion, and the patient can thus be warned in time to prevent serious damage. 2. The amount of silver in the blood can be estimated by the spectroscope. 3. The silver deposit can be removed from the skin. When a photographic negative is too thick, due to overexposure, a reducing fluid is applied and some of the silver deposit is dissolved and washed away, making the negative thinner and the picture more distinct. One of these reducing fluids can be injected superficially into the skin, dissolving the silver granules which are washed away into the deeper tissues by the lymph stream. After the slight inflammation caused by the process clears up, a white spot is seen, practically as light as the normal skin. By frequent repetition of this process the skin color can be cleared. Even the lips and the whites of the eyes may be restored to normal color. Nevertheless, an ounce of prevention is worth a pound of cure. Nowhere does this apply more aptly than to argyria, for the prevention is easy and the cure long, tedious and painful.

The best service the doctor can give you is to keep you well. Let him protect you, in the use of the silver preparations, from the danger of becoming a blue person. A law to class all silver preparations as poisons would be useful. The druggist then would not dispense them except on the prescription of the doctor and would not refill the prescription without the doctor's order. Silver seldom causes death, but the possibility of causing a lasting deformity such as the blue skin is sufficient to justify its classification as a poison. It is up to each one of us, however, to refrain from using silver preparations carelessly.

THE TIRED CHILD

By
Wingate
M.
Johnson

CHRONIC FATIGUE INTERFERES WITH THE CHILD'S APPETITE AND DIGESTION, AND NUTRITION SUFFERS STILL MORE BY UNWISE ATTEMPTS AT FORCED FEEDING EITHER AT MEALS OR BETWEEN THEM.

Doris E. Wright

EVERY PHYSICIAN experienced in the treatment of children is familiar with a certain type of child he sees practically every day. The mother is apt to introduce him with the statement that he never seems to feel good, is always cross and irritable, never wants to eat anything that is good for him and is nearly always tired. As if to explain it all in one word, she will say that he has always been "nervous." Finally she usually makes the pitiful confession, which does not fail to register with the youngster, "I just can't do anything with him."

The right sort of doctor will, of course, make a thorough study of such a patient, and sometimes his search will be rewarded by the discovery of a real physical cause for such a condition. Tonsils and adenoids have usually been removed but may still play a real villain's rôle by becoming a seat of further infection; decayed and infected teeth or infected sinuses may be present; sometimes a "leaking heart" may be a souvenir of a previous attack of rheumatism; occasionally the appendix may be the "snake in the grass" it looks; there may be intestinal parasites, or "worms," although they are rare nowadays, thanks to improved sanitation; latent tuberculosis, some rare blood disease and not infrequently pyelitis may be found. In the majority of such cases, however, physical examination is rather barren of results, except to disclose a thin, sallow, restless child, with flabby muscles, a prominent abdomen, a coated tongue and a discontented expression. The medical term for such a condition is malnutrition, the most marked characteristic being persistent fatigue.

A CAREFUL history is more apt to throw light on the cause of such a child's condition than is the examination. The parents are liable to be of nervous temperament and overindulgent or, though this happens rarely nowadays, despotic. Often both types are represented, with frequent clashes in the youngster's presence. In many cases the mother leaves her child's care almost entirely to a nurse. Since the little fellow has never had a good appetite he has been coaxed to eat at every meal and tempted with delicacies, usually sweets, both during and between meals.

Generally the child eats little or no breakfast. In the middle of the morning he usually demands and is given some bread and jelly, a

cake or a chocolate milk, effectively wrecking what appetite he might have had for the midday meal. This is eaten under protest and with much coaxing, the agony finally being ended by an oversized dessert. During the afternoon a few cakes or ice cream cones or a glass of chocolate milk may be consumed. The evening meal is another conflict, with the odds in favor of the youngster.

The child does not sleep well. For some queer reason he prefers staying up late at night and is averse to sleeping in the daytime. He is apt to be a movie fan, spending in theaters none too well ventilated the hours that should be devoted either to outdoor amusement or to sleep. Many of these children are leaders of the "younger social set."

The popular conception of this type of child is that he is precociously bright in his school work. Dr. Holt, whose "Care and Feeding of Children" has been the Bible of young mothers for two generations, says of malnourished children, "Mentally they are bright, often precocious." Professor Terman, however, has upset this view. In a study of 1,000 gifted children selected from 225,000 in California, he found that the majority were above the average in height, weight and general physical development. This should bring joy to the parents of husky, athletic youngsters, who have regarded brain and brawn as incompatible.

UNDOUBTEDLY one of the chief causes of chronic fatigue in children is the modern public school system with its long hours and its procrustean methods of forcing all children, regardless of physical and mental ability, through the same processes. It is hard for a healthy, robust child of from 6 to 10 years to endure the long hours imposed by the educational rulers. For a child who is frail, high-strung and ambitious, it is almost criminal.

A most interesting experiment was tried in the schools of Richmond, Va., during the year from April 1927 to April 1928. Two schools serving as nearly as possible the same class of people were used, each furnishing approximately 250 pupils. The children of the test group were dismissed at 12:30 from the first two grades and at 2 o'clock from the third grade. For the control group the old hours were retained, the first grade being dismissed at 1:45, the second grade at 2 o'clock and the third grade at 2:45. The opening hour for all grades in both schools was 8:45.

At the end of the year it was found that the children in the test group had gained an average of 5.12 pounds and children in the control group, 3.81 pounds, showing a 34.3 per cent gain in weight in favor of the shorter day. Before the hours were shortened the teachers in the Ginter Park school reported 52 per cent of their children fatigued. Two months after the hours were shortened they reported 19 per cent as against 63.5 per cent in the control school. The element of fatigue perhaps accounts for the fact that the test group made 18.5 per cent more A's in deportment than the control group.

Most remarkable of all was the illness record of the two groups. At the beginning of the experiment it was agreed that measles, on account of its highly contagious nature, would not be counted. Exclusive of measles, there were 225 pupil days lost in the test group against 1,677 days in the control group, a 600 per cent greater loss of time in the long hour group.

Another potent cause of chronic fatigue in older children is lack of care during and after infectious diseases. This applies to all childhood diseases, also to the ever present influenzal infection. It is hard to overemphasize the great necessity of rest during the active stage and convalescence of any of the ills to which childhood is heir. Just as important are preventive measures against such diseases as diphtheria, smallpox and typhoid. After any operation, even the so-called minor tonsillectomy, several days of rest in bed should be required.

THE treatment of chronic fatigue has largely been anticipated in the foregoing discussion of its causes. More important than treatment is prevention, which should begin during infancy with long hours of sleep interrupted only by regular feedings, baths in water and sunshine, and the "mothering" permissible for a few minutes before each feeding.

The diet is of great importance. There should be absolute regularity of meals, and eating between meals should not be allowed.

More breakfast should be eaten by most children. The less sugar given with cereals or in any other way at breakfast, the better for the appetite the rest of the day. To children who are hard to feed, little sugar should be allowed. Especially should parents be on guard against an excess of sugar in hot weather. It is such a concentrated food that it kills the appetite for more essential foods. While milk is an invaluable food, after the first year it should not be allowed to replace green vegetables and other foods needed more by the growing child.

Children should never be coaxed to eat but should have the proper food put before them and be told to "take it or leave it." They should also dispose of the substantial part of the meal before getting the dessert. If they refuse to eat vegetables and meat, let them do without the whole meal and get hungry enough to appreciate the next repast. If the child gets the idea that he is conferring a favor on parents or nurse by eating, he will use this power to drive all sorts of bargains. Eating should be taken as a matter of course and not made a supreme issue.

Of even greater importance than diet is the proper amount of rest. Rest is nature's own

antidote to fatigue. Children should be put to bed early and required to lie down in the middle of the day. Most malnourished children do not need exercise as much as they do rest, though this does not mean that they should not be outdoors a great deal of the time. An important point is to see that they get a little rest period before as well as after meals. If the children come in heated from exciting play directly to the table, they do not do the food justice.

All actual diseased conditions, such as infected tonsils, should be remedied as far as possible.

The home life should be made as pleasant as can be, and parental differences of opinion should not be aired before children.

By way of summary, the chief cause of chronic fatigue in children is lack of sufficient rest at regular intervals and the dissipation of nervous energy in wrong ways, such as too long school days, too many outside interests in school, too many parties, movies and other social functions, and emotional strains such as are imposed by unhappy home surroundings. All these tend to interfere with the child's appetite and digestion. Nutrition suffers still more by unwise attempts at forced feeding at and between meals, and too much rich or unwholesome food, given for its palatability.

The treatment is to correct as far as possible the child's habits of living and to give wholesome food at proper intervals.

HEALTHGRAMS ✣ from Articles in This Issue

¶ When one studies the science of embryology and considers the marvelously complex process by which the human being develops from a single cell into a complete individual, the remarkable fact is not that there are occasional failures in the proper development, but that such failures are not more frequent.
See page 230

¶ Life may begin at 40, as Professor Pitkin so ardently declares, but obviously life begins at that glorious age only for those who reach it.
See page 257

¶ It is generally conceded that the normal outcome of every individual's life is happy marriage and that the laying of the proper foundation for this normal sex life in later years is exceedingly important in childhood.
See page 220

¶ When a man is old enough to wear artificial teeth he has reached the age of susceptibility to cancer. Any persistent irritation, however mild, to the tongue, lips or cheeks, whether it be caused by artificial or natural teeth or anything else, should be promptly investigated and corrected. *See page 252*

¶ Among his many achievements in the world of medicine, Hideyo Noguchi demonstrated that dementia paralytica, sometimes referred to as "softening of the brain" or general paralysis of the insane, is due to syphilis. *See page 245*

¶ By clever substitutions the resourceful housewife can get along with very little hospital equipment when she must function as home nurse. *See page 227*

¶ The mother with a vomiting baby should consult her doctor at once and never let the condition go on, thinking it is just a "healthy sign."
See page 208

¶ Acute asphyxia permits of no temporizing whatever. The best and most skilful treatment available must be instantly applied, or death will promptly ensue. *See page 233*

¶ Even when drawn from a great depth and filtered through sand and other material the finest drinking water is never absolutely free from germs. *See page 226*

¶ In order to develop nature's gifts so unfortunately hidden in the atypical child those in charge of him must never forget that at no time does he adjust himself to others or to his environment. Conditions and personalities must be made to fit him. *See page 212*

¶ Silver seldom causes death, but the possibility of causing a lasting deformity such as the blue skin is sufficient to justify its classification as a poison. *See page 214*

¶ The message of hope which modern medicine can give to humanity is: Cancer is curable.
See page 202

¶ We are too apt to consider the skin simply as a covering for the body and forget that it is an organ the same as the heart or the lungs or the liver. *See page 247*

¶ To cure the patient, varicose veins must be removed or obliterated because they cause normal circulation to be reversed; that is, blood is being held in the diseased veins rather than being carried toward the heart. *See page 237*

¶ Despite the fact that the Indians died off so rapidly, there is abundant evidence that every part of America when first seen was healthful, and many parts, later abandoned as pestilential, then teemed with healthy population.
See page 205

Sex Education

By

ROBERT W. BENNER

ALL BOOKS on sex education, and there are many on the subject, say that the attitude of the mother in matters of sex instruction for the young child is all important. Her point of view is what the child gets more quickly than anything else. It is essential therefore that the presentation of the subject be unsentimental, direct and not too emphatic. The American Social Hygiene Association of New York states in one of its pamphlets: "A question mothers often ask is: 'Granted that I should give my child sex instructions, at what age should I begin?' Most educators agree that the time to inform a child is when he first asks intelligent questions. These should be answered simply and informally."

The root of the parents' trouble lies in the fact that because of embarrassment growing out of their own faulty childhood experiences they cannot answer the child's natural questions regarding the origin of life as they answer his other questions. Those who have morbid feelings connected with anything related to sex are usually victims of their own childhood experience. If the parent shows embarrassment at a child's questions regarding sex he is permitting the first great stumbling block to be set up between him and the child. On the other hand, if no sense of embarrassment or strangeness is associated with sex curiosity the parent creates the most favorable conditions for the child's wholesome start of his sex experience. Young men and women who as adults always shun all members of the other sex have not received the proper sex education to which they are rightfully entitled, and usually the parents are responsible. It is generally conceded that the normal outcome of every individual's life is happy marriage and that the laying of the proper foundation for this normal sex life in later years is exceedingly important in childhood. It is unsafe and unfair to attempt to protect a child from sex risks by building up fears or antagonisms that destroy hope of a happy marriage.

Many mothers ask the question, "Must one begin to talk frankly to the 12 year old child, thus getting involved in explanations that might be put off a year or two longer?" The answer is "No," for this is at least six years too late for the first giving of sex information. The 6 year old child must already have asked for knowledge. Parents must be prepared to answer the 3 year old intelligently when he asks such simple questions as where babies come from. Answer these first questions without embarrassment, answer them simply, unhesitatingly and casually. It is not necessary to go into detail concerning the subject. The chief obstacle that stands in the way of most parents is their own emotional attitude or their lack of sufficient knowledge.

The young child who thinks nothing of running about naked should not be told he is "naughty" or "not nice." He should simply be told that it is customary for grown-ups to wear clothing and, as he is getting quite big, he must put on clothes before going out among people who are not members of the family.

THE child who has a brother or sister near his own age is fortunate in that he may learn incidentally, in the process of bathing and dressing, the likenesses and dissimilarities of boys and girls. Little boys and girls of the same family should be allowed to see each other naked without any feeling of embarrassment. In those families where there are only girls or only boys, first impressions of the opposite sex are sometimes made through observation of the parents. In other words, the parents may feel free to undress before their young children without embarrassment so that the child will not grow up entirely ignorant of the differences in the appearance of sexual organs. If the parents do not feel that they can give their children this form of sex education they might even have small friends visit in the home for several days at a time, once or twice a year, beginning when the child is about a year old and continuing through the fourth year. Those families who cannot arrange for this mingling of boys and girls have to depend on art, such as pictures and statues of young boys and girls, to make good

the lack. Parents should be sufficiently well informed on the subject of sex education to realize the importance of giving the child at a very early age the chance to observe, in a casual, matter-of-fact manner, these differences in the anatomy of the male and female.

If the child has not asked questions by the time he is 5 years old, he needs to have the subject of reproduction brought to his attention; otherwise, he may be receiving information on the subject from a playmate and building up misconceptions and morbid attitudes regarding it. Children from 3 to 6 years should be told frankly that babies are formed within the mother's body.

As THE child nears the age of 10, parents should explain that it is only natural that all plants and animals desire to reproduce; that because of reproduction, life goes on and on, otherwise, plants and animals should soon become extinct. It can be pointed out to the child that flowers have male and female parts. The process of fertilization of the ovary by pollen from the stamen should be called to his attention. The story of the fertilization of the eggs in the water by the male fish and frogs should be explained. The fertilization of the egg within the body of the mother turtle and mother bird is the next step. This may be followed by the story of the mammals, such as the calves, colts and kittens, the embryos of which grow within the body of the mother. This leads up to the birth of the human baby. The child should be told that the male turtle, horse or other animal has an organ or a tube through which he can place his egg in the opening of the body of the female and that the same general method of reproduction applies to human beings. Also, it should be explained that this union of the two cells can take place only among grown-up or adult animals because in young ones the organs are not fully developed. The child is then sure to ask just how a baby is born. The mother should explain that, when the child is fully developed within the body of the mother after a period of nine months, a passageway is opened up to the outside world. It is well for children to realize that birth is a serious and painful thing.

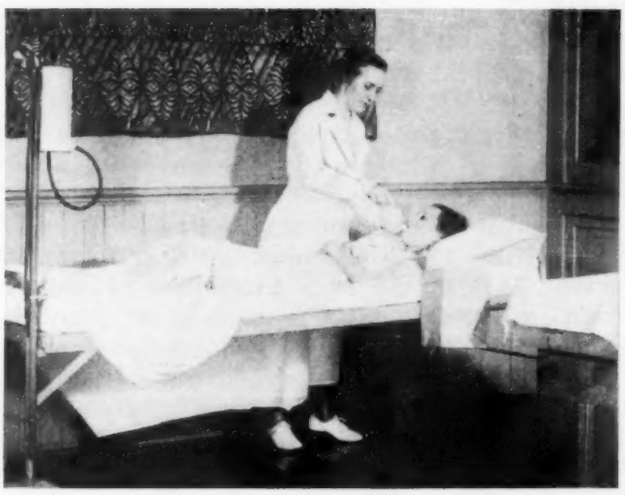
Adolescent children should be told in detail concerning the reproductive functions, with a frank explanation of the sexual act, stressing the fact that it is perfectly proper for husband and wife but that it is most improper when the couple is not married. They should be told that girls of 12 or 13 years of age could be mothers but that nothing could be more unfortunate at this age both for the young mother and her child. Parents should warn young people not to hasten into marriage as they are sure to regret it later. They should be encouraged to obtain the best education that they can get; to develop strong vigorous bodies, and to work and play long enough so that they will have a good appreciation of a full life. They should be urged to develop an appreciation of beauty, art, music and literature, and to learn to understand adults and children. Girls should go in for everything that will enrich their lives in the years before they become strongly interested in boys and men, as they will and should. Boys, likewise, should be encouraged to live constructively so that the bearing and rearing of children of the next generation will not be turned over to men and women of an inferior type. Girls should be taught the value of the study of domestic arts on which rests the happiness of homes and men and women and children.

In warning the adolescent against sexual misconduct it is of utmost importance that parents convey to him the idea that there is nothing sinful or indecent about the sexual act, provided the couple is married. Psychiatrists agree that many a marriage which might otherwise have been a happy one has been wrecked by circumstances which can be traced to faulty training in sex matters, and so a great responsibility falls on the parent in this matter of sex instruction. The child's whole future happiness may rest on his manner of presenting this subject.

No PARENT should be misled into thinking that if he avoids any mention of sex to his child, the child will never obtain any information on the subject. He is almost certain to hear it from his companions, and the subject will take on a morbid and vulgar aspect instead of being presented in the constructive and wholesome way in which it should be. Parents must do all in their power to prevent the child from thinking of sex as vulgar. If the child is taken into their confidence he will gain so much from the fellowship with his parents that he will feel free to seek advice at any time. How much better it is to pursue this course than to tell the child that the doctor brings the baby in his bag or that the stork brings babies. He is certain to find out the truth, and he will then begin to lose confidence in his parents and to seek information elsewhere.

Meeting Emergencies at Home

By FLORENCE BROWN SHERBON



FOR A DRINKING CUP OR DRINKING TUBE, A SMALL TEA POT, A CREAM PITCHER WITH A SUITABLE SPOUT OR SODA FOUNTAIN STRAWS MAY BE COMFORTABLY USED.

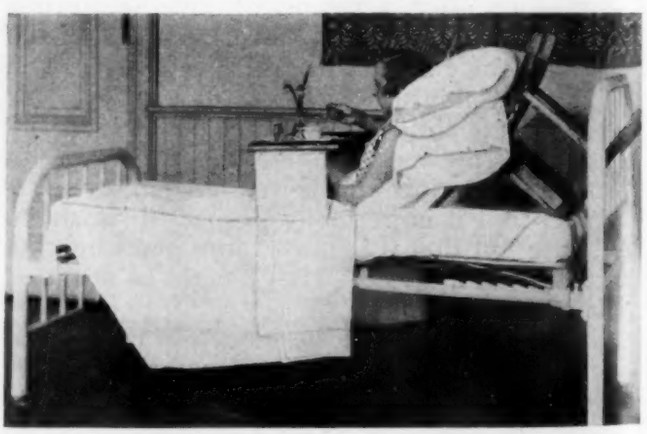
INTELLIGENT modern home makers will give due thought to the fact that illness and emergencies occur in every home. A minimum of essential equipment should be established and kept in order. Since both space and money are serious considerations in most homes at the present time, this equipment should be minimum. By clever substitutions the resourceful housewife can get along with very little hospital equipment when she must function as home nurse. Suggestions for certain improvisations are here offered. The home maker should collect additional ideas from all possible sources and preserve these in a note-book or card file or by some other orderly method.

Heat for a room not connected with the central heating system may be supplied by an electric or gas stove or a carefully tended oil heater. A small airtight wood stove may be attached to a stove pipe to be carried out of a window in the absence of a chimney. A piece of galvanized iron can be fitted above the dropped upper sash with an opening to fit the pipe. An elbow on the outside will be necessary to create a draft.

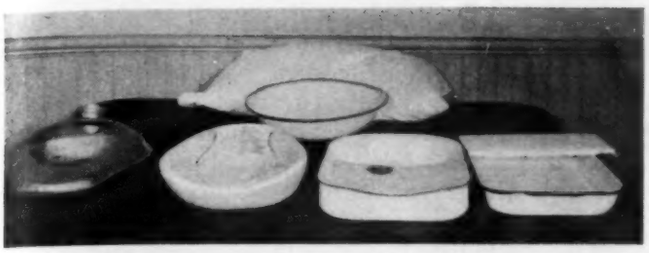
In case of illness when there is not a narrow bed in the house or one suitable for an invalid, a folding cot, preferably with flat-linked springs, may be elevated to a convenient height by placing boxes under the ends or by placing a wooden block under each leg. The castors must first be removed and the legs of the cot firmly anchored to the blocks. If the cot legs are hollow a spike may be driven into the center of each block over which the hollow tubing of the cot is placed. If the legs are not hollow it will be necessary to cut a socket in each block into which the leg fits. Even a canvas cot can be made quite satisfactory by elevation on boxes and by proper padding. If a cot without vertical ends must be used, as may occur in a camp, the mattress will need to be tied at the corners to prevent its slipping. Stout strips of cloth for this purpose may be pinned to the mattress with large safety pins. A canvas cot will be more comfortable if covered with folded blankets and comforts rather than with a mattress. These should be folded carefully to fit the cot and stretched smoothly, then pinned together firmly with large safety pins and tied at the corners to the legs of the cot. The under sheet should be folded around and under this improvised mattress and included in the corner ties. The draw sheet must be carefully folded under at the sides without making wrinkles under the patient, as small irregularities will be perceptible through the thin padding.

After a comfortable bed has been achieved and set at a height convenient for the home nurse, it may become necessary to improvise a bedside table. A wooden packing box of suitable height may be covered with a towel or table cover. In case of prolonged convalescence it can be fitted with shelves to provide storage for books and occupational material.

If paper boxes are more readily secured a flat box inverted over a tall box will serve very well. A low coffee table or other small table



A BACK REST MAY BE MADE OF AN INVERTED, STRAIGHT-BACKED CHAIR, A SUITCASE, DESK LEAVES OR WASHBOARD.



TYPES OF BED PANS, FROM LEFT TO RIGHT: A SLIPPER PAN, A PERFECTION PAN, A DOUCHE PAN, AN IMPROVISED PAN WITH A PIECE OF BOARD WRAPPED IN A TOWEL. REAR: A BED PAN MADE FROM A FOLDED PILLOW AND HAND BASIN.

DEVICES FOR APPLYING HEAT AND COLD, LEFT TO RIGHT IN FRONT: AN ELECTRIC PAD, A HOT-WATER BAG, A REFRIGERATOR PAN COVERED WITH CRETON, A PIECE OF INNER TUBE, A RUBBER ICE BAG. CENTER: A DENIM SACK OF SAND, A SACK OF SALT, JUGS, CANS AND PRESSURE RINGS.

may be placed on a box to bring it within the patient's reach.

The nurse's table may be any sort of table which is not so large as to be in the way. The home nurse must have a place to keep the bedside record, thermometer tray, medicines and other supplies. A wide window sill or a desk shelf or mixing board clamped under the window sash might serve in a temporary illness. A small desk is ideal, but an assemblage of boxes may be used in an emergency.

The nurse's cot may be any couch or cot which is available and movable. In a pinch a mattress may be placed on three or four pairs of chairs.

A bed pan may be quickly improvised by elevating the patient's hips on a firmly folded pillow or blanket and then pushing a hand basin against the pillow and under the hips far enough to clear the anal opening. A more permanent improvisation can be made by placing a small board, wrapped in a towel, over the end of a large baking pan.

A bed pan pad for the protection of the mattress can be improvised from a piece of table oilcloth, the back of an old rain coat or a thick pad of newspapers.

A urinal for a man can be improvised from a quart sized glass jar or a tin can; for a woman an oval shaped vegetable dish is convenient.

A back rest may be made of an inverted straight-backed chair, a suit case, a washboard or leaves from a desk.

A lap table may be made from a wooden packing box, a corrugated paper box or piles of books with a desk shelf. An ironing board of suitable height may be brought over the patient's lap.

A tray may be improvised from a mixing board, a framed picture, a box lid, a drip tray or a broiler tray from a gas stove.

For a drinking cup or drinking tube a small tea pot, a cream pitcher with a suitable spout, soda fountain straws or a few inches of rubber tubing may be used.

A wheel chair may be quickly improvised by strapping roller skates securely under the rockers of a chair.

Devices for applying artificial heat and cold may be made from sacks of denim or other firmly woven material half filled with salt or with sand washed free from dust. The edges should be double stitched. A galvanized refrigerator can or water bottle, with good washers in the screw top, answers the purpose of some situations very well. Sections of inner tubing from an old automobile tire may be closed by rolling or folding the cut edges and clamping with paper clips placed closely together. These are particularly good for holding pounded ice.

Stone jars, electric or other laundry irons heated and wrapped, large vinegar or cider jugs, or heavy pop bottles closed with rubber corks, all make good bed warmers but do not fit closely to a painful surface. Crushed ice may be placed in a rubber bathing cap which is then drawn together and closed tightly with a rubber band. The sleeve of an old raincoat may be so used. For the application of artificial cold to an ear or an eye a rubber glove may have the fingers telescoped into the palm, which is then partly filled with finely crushed ice and closed at the wrist with a rubber band.

Electric light bulbs attached to extensions have many uses. A small bulb may be placed inside a round cereal box of which the bottom has been removed and the cover slit to fit the wire. This held over an ear gives a penetrating warmth. When light therapy is needed bulbs may be attached to improvised supports and placed over a knee or foot or even over the

A CORRUGATED BOX, CUT AWAY, CAN COVER ELECTRIC LIGHT BULBS TO CONVEY HEAT FOR KNEE OR ABDOMEN.

AN ELECTRIC LIGHT INSIDE A CEREAL BOX IS APPLIED TO ONE EAR; A BATHING CAP FILLED WITH CRUSHED ICE AND CLOSED WITH A RUBBER BAND IS AGAINST THE OTHER. THE BACKREST IS MADE FROM A LARGE CORRUGATED BOX.

entire abdomen. The support may be made from barrel hoops or corrugated boxes.

For applying moist heat to small areas a wringer may be improvised from a small towel. For large compresses or stupes, sticks or rulers may be run through the hems of a stout piece of canvas. For large packs for the abdomen, large joints or the entire body, bath towels and a common laundry wringer and tub may be used.

An irrigation pad to protect the bed during copious irrigations of the intestinal tract or the vagina may be made from a roll of towels or cotton blanket the size of one's arm and about 3 feet long placed horseshoe-wise around the hips with the ends at the edge of the mattress and about 12 inches apart. A rubber sheet, a rubber apron or a rain coat is draped over and about this roll to form a shallow basin with a folded curtain carrying the water into a container on the floor.

A similar arrangement may be used for washing the hair of a bed patient.

In the absence of an apron or a smock, a freshly laundered sheet may be used in an emergency operation. The sheet should be held up so that the middle crosswise crease will drop from chin to feet of the person who is to wear it. The sheet is folded over at the top so it will just clear the feet at the bottom. It is then brought smoothly around under the arms, and the upper corners are crossed in the back, brought over the shoulders and pinned to the front; that is, the right upper end of the sheet is pinned to the fold in front of the left shoulder, and the left upper end in front of the right shoulder. This can be done in such a way that part of the sheet falls over the sleeve and arm. When the sheet is properly adjusted one can move around as freely as if wearing a real apron. A freshly ironed kitchen smock, nightgown or night shirt may be used.

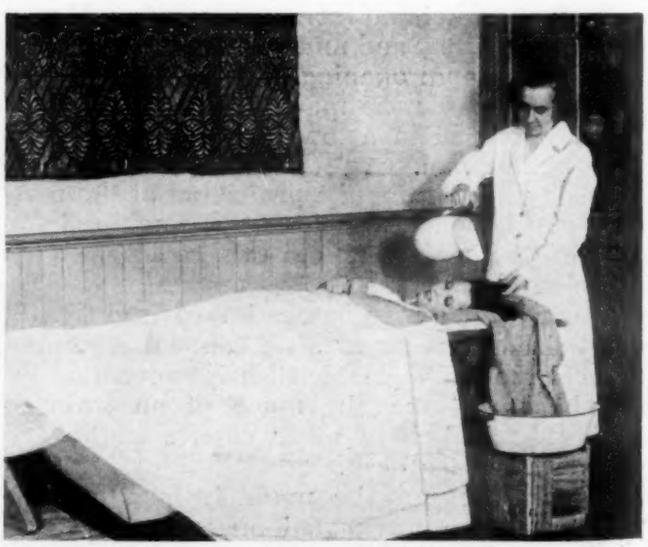
A surgeon's mask and cap may be made quickly from a straight piece of cloth which has openings for the eyes and is long enough to cover the entire head.

Instruments may be sterilized by placing them in a wire frying basket or a colander and submerging them in boiling water. A pressure cooker makes an excellent sterilizer for dressings or instruments. Sheets, blankets, dressings, towels and other supplies may be quickly sterilized by ironing them on both sides with a hot iron and pinning them up in squares of old muslin or in pillow cases which have also been freshly ironed. Cool sterile water may be obtained by boiling water in several tea kettles and setting them in a cold place or in cold water, after inserting a plug of sterile cotton in the spout.

An operating table for an infant or a small child may be extemporized from an ironing board. A dining room table may be used for an emergency operation on an adult. The table should be wiped free from dust and washed with an antiseptic. An ironing board may be used for an instrument table. It should be washed with an antiseptic solution and covered with freshly ironed towels. Clothes pins of the spring type should be boiled and used to fasten sheets and towels in place. They can also be used as forceps for handling instruments and dressings.

Newspapers may be spread about to protect the floor. An open newspaper should be placed on a chair to receive surgical sponges, dressings or other materials which are to be burned.

The bed for an operative patient should be thoroughly warmed with jugs, bottles and cans of hot water. These should be removed before the patient is placed in bed. A towel is spread over the usual location of the pillow, and a vegetable dish or basin is placed at hand to be used in case of vomiting or expectoration.



FOR WASHING THE PATIENT'S HAIR, A DRAIN PAD CAN BE MADE FROM A ROLLED SHEET AND A KITCHEN APRON. THIS DEVICE MAY LIKEWISE BE USED FOR IRRIGATION.

In the absence of electric light, a strong light for an emergency operation at night may be managed by hanging the best light available in a favorable spot and carefully focusing it with a small mirror or a bright silver or chromium dish behind the lamp to throw the light on the operative area. An ordinary lamp can be anchored with several wires about the bowl and burner and hung on a nail driven in the desired spot. With certain anesthetics there is danger of explosion if the fumes come in contact with open flame. The lamp may have to be placed at some height and distance for safety.

An electric bulb may be placed in a cylindric box or coffee can and held by an assistant in such a way as to focus the light strongly where needed and at the same time protect the eyes of the surgeon from cross lights. An ordinary oil lamp may be shaded and held by an assistant in such a way as to direct the light on the proper spot. A small mirror may be used as a reflector.

After the patient is placed in bed the site of operation may be protected from pressure and the weight of the bedding by an extemporized "cradle" made from three sides of a box, two halves of a barrel hoop crossed and wired together, a wire camp broiler or anything which will be of convenient size and shape.

After an abdominal operation the knees should be flexed and supported by a pillow tightly rolled and perhaps tied about with a bandage or pinned with large safety pins.

A head rest is necessary in any prolonged treatment in a bath tub. With an exposed tub of the old type a sheet may be folded in a long, narrow strip and pinned loosely about the head of the tub in such a manner that it forms a hammock in which the head of the patient rests.

With a built-in tub a foot stool or small box may serve which may be placed in the water and padded with a folded bath towel.

If there is a paralytic condition of the feet, known as foot-drop, or marked weakness or a cast about the knee, support will be required at right angles for at least part of the time. Two boards approximately 12 inches square and nailed together at right angles or two sides of a corrugated box should be well padded with cotton and placed under the foot with the sole of the foot against the upright side of the support. It may be necessary to place a "doughnut ring" under the heel. Doughnut rings are made from cotton wound firmly with bandage in sizes suitable for furnishing protection from pressure and friction for the elbows, heels, shoulder blades or hips. Circles of cloth may be stitched and filled with cotton, sawdust or bran.

A broken arm or leg may be suspended in a cloth sling from a pole supported at the ends by the head and foot of the bed and tied in place to prevent slipping. A convalescent or chronic invalid often needs help in moving about for comfort. The pole may serve in some instances to provide a place for hanging occupational material within reach. A stout rope with a loop wrapped with a towel for a handle may be fastened to the head or to the foot of the bed. If it is attached to the head the patient may pull himself up in the bed when he has slipped toward the foot. It will also aid him to turn over. If the rope is attached to the foot he may pull himself into a sitting position. A small box placed at the foot of the bed will enable the patient to brace his foot against it and push himself up in the bed.

IN THE ABSENCE OF A SMOCK, A FRESHLY LAUNDERED SHEET MAY BE USED FOR AN EMERGENCY OPERATION. THE MASK AND CAP ARE MADE FROM A STRAIGHT PIECE OF CLOTH COVERING ALL THE HEAD BUT EYES AND NOSE.

In case of nasal or throat secretions a grocery sack, with the top turned over as a cuff, may be pinned to the mattress to receive the paper handkerchiefs as they are used. A cone of newspaper may be attached to the bed in the same manner. In place of paper napkins, cleansing tissue or handkerchiefs, one may use squares of toilet paper or of old muslin. These should be placed in a box lid or small tray to prevent scattering.

A HEAD REST IS NECESSARY IN ANY PROLONGED TREATMENT IN A BATH TUB. WITH THE OLD TYPE OF TUB A HEAD HAMMOCK CAN BE EASILY MADE WITH A SHEET.

The TRAVELER'S FOOD and

By CLAUDE LILLINGSTON

A TRAVELER, spiritual kinsman to Bernard Shaw, once remarked that he would like to organize a floating hotel on new and singularly unconventional lines. It would be all that the modern floating hotel with its rich and varied menus is not. His ship would be stocked with quantities of mineral waters, a varied assortment of fruit and only those other foodstuffs which the most successful hydropathic establishments allow their patients. The medical officer of this ship, floating hydro rather than floating hotel, would be a specialist in dieting, hydropathic treatment and all the other modern devices employed with success in spas and other health resorts.

This picture, a little out of focus perhaps, as all effective caricatures are, is a hit at the gustatorial orgies in which many travelers indulge on board ship. Overeating in trains and hotels is a common enough vice, but the quintessence of unbridled gluttony is apparently reserved for the sea. The keen air and lack of other diversions give an edge to appetites already much too sharp. At home the effects of overeating are usually worked off by taking exercise, but in the deck chair of a steamer or in the padded comfort of a railway carriage the traveler is apt to emulate the boa constrictor which has just put himself outside his victim. With little or nothing to do, the daily round of home duties only a memory, meals become the chief event of the day. The newness of the surroundings and the food served give a dangerous fillip to the appetite. Even among the well-to-do there is a common tendency to approach the problem of food on a journey in a bookkeeping spirit. On the profit side there is the food; on the debit side, the money paid for it. The account is not balanced if the consumption of food is not more or less equivalent to its cost. Which of us has not sinned in this respect and eaten a full meal, the stomach mutely protesting meanwhile, simply because we had paid in advance?

It is this profit-and-loss spirit which may upset the floating hydro even before it has been launched. The same spirit would stultify any attempt at a compromise between the floating hydro and the floating hotel. For if, in the same dining saloon, provision were made for both the fasting and the feasting, the former would commit murder in a quite pardonable outburst of envy, hatred, malice and all uncharitableness.

Picture the disconsolate and unwilling convert to dietetic asceticism sitting over his rusk and mineral water and watching out of the corner of an enviously green eye the prandial profligacy of his unrationed fellow traveler. Picture one table adorned only with soda water syphons and another, close by, groaning under all the wonderful hors d'œuvres modern culinary science can produce. If you are a doctor endowed with prophetic vision you will pity rather than envy the traveler, bulgy of eye and paunch, as he takes stock of all the food spread out before him, and his double chin quivers in delicious doubts as to what to eat next. But one cannot expect the ordinary mortal to detect the specter at this feast and to be humbly grateful for his own meager fare.

SHORT of submitting to a special food regimen under a lynx-eyed professor of dietetics, the traveler can do much to avoid digestive storms, major and minor, by learning to think bacteriologically and in terms of chemistry and physics. This may sound heavily scientific, but it is just a matter of common sense. Even the sausage is amenable to common sense. The traveler knows little or nothing of its contents at home, but his domestic ignorance on this score is as nothing to what he doesn't know of sausages abroad. There, more than ever before, eating sausages becomes a sublime act of faith. A

DRINK

Part IV of : : Health Hints for Travelers

PICTURE ONE TABLE ADORNED WITH MINERAL WATER AND RUSK AND ANOTHER GROANING UNDER HOR D'OEUVRES. DOCTORS PITY TRAVELERS WHO "STUFF" FOOD.

chicken is a chicken, and a chop is a chop, easily to be identified as such, so familiar and characteristic are their outlines. It is quite different with a sausage. It is easily recognizable as such, but that is as far as it goes. Under the attractively brown skin, lurking in its chubby interior, may be all sorts of surprises more or less dishonest. It is impossible to tell whether bread crumbs are masquerading as meat, or whether the meat in a sausage is that of pig, horse or unicorn.

NEED the traveler know? Must he shun all sausages because he cannot tell the good from the bad, sheep from goat, honest pork from dishonest donkey? Paradoxical as it may seem, it is not the deliberate dishonesty of the sausage manufacturer who dares not put a name to the actual ingredients of his wares that matters most. It is, rather, slipshod carelessness and blissful ignorance that are responsible for the cultivation of highly poisonous germs in a sausage. For many generations a most unwarrantable libel has clung to the sausage. The term "botulism" is derived from the Latin *botulus*, a sausage. The perpetrators of this term assumed that sausages could produce a disease special and peculiar to themselves. No sausage, no botulism, they argued. They did not realize that the sausage is simply a vehicle for a germ which may choose any number of other vehicles, such as brawn, in which to move and multiply.

One of the earliest records of sausage poisoning comes most appropriately from Württemberg where, in 1793, a monster sausage, encased in a pig's stomach, was eaten by over a score of persons, six of whom died. Pasteur had not yet taught the world to think in terms of germs and microbes, so the doctors of Württemberg must certainly be excused for not getting any nearer to a correct diagnosis than to say that their six compatriots had died of sausage poisoning.

IT WAS not till 1895 that investigations into the origin of certain outbreaks of sausage poisoning in Belgium led to the isolation of the offending bacillus and (this is where the libel comes in) its christening as Bacillus botulinus. It is widely distributed in nature, in dust and on fruit and vegetables. When it settles and multiplies in food, vegetable or animal, it produces a deadly poison which cannot be tasted or smelled. The conditions which favor this bacillus are a lack of ordinary cleanliness, heating which does not kill, and storage of food after cooking at a temperature favorable to the growth of germs. Made-up dishes, such as brawns, favor the

growth of this bacillus by virtue of alternate warming up and cooling down. The length of the interval between the cooking of food and its eating also plays an important part in the mass production of this germ.

Fortunately serious cases of sausage poisoning are rare. In order to be on the safe side in hot climates, the traveler does well to avoid made-up dishes, whether they be brawns, sausages or other composite food which undergoes various temperature changes between preparation and consumption. He must not lull himself into a false sense of security by believing that his senses of taste and smell will give him due warning.

Not only may cooking fail to sterilize food, but it may even promote its infection if periods of heating are punctuated by periods of cooling. The traveler must not, therefore, blindly place faith in the high temperatures to which his food is supposed to be exposed. At the present time the pendulum of dietetic fashion has swung toward uncooked food, largely because of its intact supply of vitamins. But the good that may be gained from vitamins is counteracted by the possible presence of parasites. A German authority has recently pointed out that the growing frequency with which intestinal parasites are now found among his compatriots is due to popular preference for uncooked food and vegetables. It seems that no matter how many dangers are finally avoided, there are always others to take their place. The traveler confronted with the choice between vitamin deficiency and parasite superfluity should remember that it is much easier to repair the former than to exorcize certain intestinal worms. A bacteriologist in Cairo recently amused himself and horrified his readers by examining for parasites and pathogenic germs samples of fruits and vegetables picked up at random in shops and market places. There is no need here to retail the list of his zoological discoveries. The list would, of course, have been much shorter and less alarming had the bacteriologic sampling been preceded by a generous baptism of the articles in question under the water tap. This is a useful tip: Whenever possible, wash fruits and vegetables under running water.

When there is a choice, preference should be given to such fruits as oranges, apples and bananas, which you can insist on peeling for yourself, thus preventing any chance of their being soiled. Much more dangerous are such fruits as dates and figs, which flies and other parasites may have sampled, used as a playground and exploited in other ways. Salads are particularly dangerous, as the convolutions of their leaves are apt to form harbors for germs safely protected therein from the swirls and currents of the water tap. When in doubt, eat only cooked fruits and vegetables, and be sure that the interval between cooking and eating is not too long. Canned fruits and vegetables are sometimes to be preferred to native products.

Shellfish are filters which live by extracting minute forms of animal and vegetable life from the water which circulates through them. The dangers to the traveler of eating shellfish are twofold, idiosyncrasy and infection. Soon after they have been eaten, shellfish provoke in some folk a rash and various other unpleasant symptoms. Most travelers know beforehand whether or not they suffer from such an idiosyncrasy; those who do, have only to give shellfish a wide berth. Shellfish infection is a much more serious and difficult problem. It can be solved either by preventive vaccination against shellfish-borne diseases such as typhoid and paratyphoid, or by simply keeping all shellfish out of the day's menu.

A single mussel filters an average of 5 quarts of water every hour. When this impressive feat in hydraulics is performed in water contaminated by sewage, the number of typhoid and other bacilli retained by the mussel is apt to attain astronomic proportions. It is true that shellfish digest as well as filter germs; but the process of digestion is slow, and before it has been completed, the shellfish itself may have become the subject of digestion by some unwary diner.

It has been calculated on good authority that more than half of all the cases of typhoid and paratyphoid disease occurring on the shores of the Mediterranean are due to infected shellfish. Much is at present being done to reduce this danger by cultivating shellfish in clean water and by keeping them in a special shellfish bath for some time before they are eaten. This bath consists of a series of vast reservoirs provided with filtered sea water. Here the shellfish com-

plete the digestion of whatever poisonous germs they may have absorbed in less salubrious surroundings and attain a more or less blameless standard of purification. But the traveler would be rash to assume that every shellfish put before him has passed through such a cleansing purgatory. The pangs of saying "No" to oysters on your host's table are as nothing to the pangs of typhoid.

The most common food problem of the traveler is, however, that of constipation. It is possible, of course, to use the aperients with which he has stocked himself, but it is far wiser to avert constipation by such natural means as proper exercise and diet than to relieve it by aperients after a headache and the other associate discomforts of constipation have rendered drastic measures urgent.

THE town dweller need not worry about what he drinks as his water supply is under the control of the sanitary engineer whose business it is to provide unpolluted drinking water. As soon as the town dweller escapes into the country, however, he is liable to be poisoned by what he drinks unless he takes an intelligent interest in the problem. Rivers are, unfortunately, natural sewers, and as a rule the farther water is taken from the source, the greater are its impurities. The smell of water may be most disagreeable but is not necessarily anything more, for the minute organisms which generate smells in water are seldom dangerous. Even the stagnant water at the bottom of a well which some dead animal has turned into a sepulcher may not prove fatal to the drinker; and such water is far less dangerous than the odorless and sparkling water which happens to contain the germs of typhoid, cholera or dysentery. As guides in this matter the nose and eyes are much inferior to reason supported by an elementary knowledge of public health.

Many travelers have a sublime and touching faith in the unglazed porcelain filters through which their drinking water has passed. In principle such filters are simply marvelous. In practice in private households they are liable to be worse than useless because of the blind and unintelligent faith they inspire. If they were scraped and cleaned in boiling water every two or three days they would, no doubt, serve their purpose. But the average householder is inclined to assume that he has acquired a foolproof device which will function with automatic perfection provided he does not tamper with it. Left to itself, the average porcelain filter gets clogged up and soon becomes a source of contamination instead of purification of water.

When the source of the supply is dubious and there are no facilities for boiling the water, fall back on mineral waters. They are bottled under hygienic conditions and kept bottled until needed. It is therefore highly improbable that they contain dangerous germs. Some travelers brush their teeth in such mineral waters, preferring to pay a few cents for this modest insurance against water-borne disease.

With no more elaborate equipment than a clean pocket handkerchief and a spirit lamp, one can make one's own supply of safe and palatable drinking water. The pocket handkerchief is used as a filter to catch various parasites and their eggs in its meshes, and the spirit lamp ensures the boiling of this filtered water for a few minutes. It is now quite safe to drink. Some persons may object to the flat taste of boiled water, a fault easily corrected by half filling a bottle and shaking it thoroughly till it has become well aerated. After such sterilized water has been kept standing for a few hours in a warm room, it will again teem with germs derived from the dust suspended in the air. Most of these germs are quite harmless. Only for a few minutes after boiling is drinking water absolutely sterile. Even when it has been drawn from a great depth and has been filtered through sand and other material the finest drinking water is never absolutely free from germs.

Is ice safe? More or less. Germs are not promptly frozen to death on ice, but their reproductive faculties are effectively numbed. The odds are that any germs, such as those of typhoid, which have became locked in a lump of ice will have perished before it melts. Prof. W. H. Park of New York has written: "Natural ice which is stored usually for several weeks or months before it is used is practically safe."

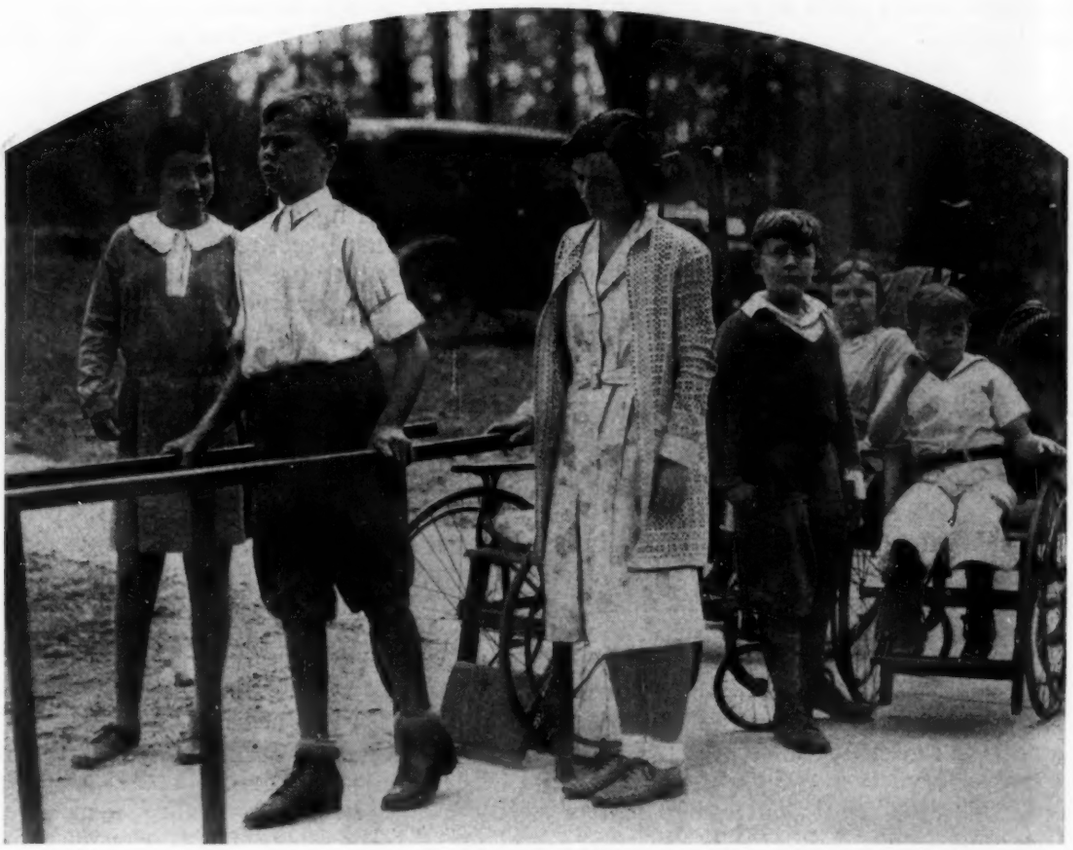
Fresh milk should always be boiled. When this is not feasible, preference should be given to dried, powdered or canned milk. The cultivation of a taste for a slice of lemon in tea as a substitute for milk is a wise precaution which distinguishes the wary traveler from the tyro.

[THE END]

Preventable Deformities

By

GARRY de N. HOUGH JR.



MUCH HAS BEEN ACCOMPLISHED FOR THE IMPROVEMENT OF THE SITUATION OF THOSE WHO HAVE HAD POLIOMYELITIS.

EVERY ONE who reads this article is probably entirely familiar with the instrument the physician uses in the course of a physical examination, to listen to the sounds produced in the heart and lungs. Like many other commonly accepted instruments of today, the stethoscope was invented a relatively short time ago. Its inventor was a French physician, René Théophile Hyacinthe Laennec. Only slightly over one hundred years ago, when this distinguished doctor was asked the object of medicine, he said, "The aim of medicine is the cure of disease."

Much has happened during the past century, no less in medicine than in other fields. Perhaps one of the most significant changes is illustrated by contrasting with this statement of Laennec the conception of the aim of medicine as expressed in 1934 by a distinguished Englishman, Sir George Newman. Sir George declared, "The ideal of medicine is the prevention of disease, and the necessity for curative treatment is a tacit admission of its failure."

There is considerable popular misunderstanding regarding one special field of medicine called orthopedics. This is due to the fact that most persons are much more familiar with Latin roots than with the Greek. The name is not derived from the Latin word *pes,* meaning foot, but from two Greek words *orthos,* meaning true, straight or free from deformity, and *paedos,* meaning child. The term "orthopedics" was coined by Nicholas Andry, a French physician, who published in 1741 a volume entitled "Orthopedia, or the Art of Preventing and of Correcting Bodily Deformities in Children." It is interesting to note that Andry was 83 years old when this book was published. His early training was in theology, of which he was professor in the University of Paris. His originality of thought and his critical attitude toward traditional authority caused him many difficulties in the theological field. As a result, in spite of his established position he gave up this work and turned to medicine when past middle age. His tendency to wander from the customary lines of thought is suggested by the interesting title of his thesis which he wrote on receiving his medical degree: "What Part in the Cure of Disease Have Cheerfulness in the Doctor and Obedience in the Patient?"

Many medical specialties, such as diseases of the eye, ear, nose, throat, heart and lungs, are located anatomically. Others, such as pediatrics,

or the care of children, and the less commonly known geriatrics, or care of the aged, are designated by the age of the patient. Orthopedics, however, has the entire body as its field, and individuals of all ages come within its scope. It includes the care of deformity and deforming diseases. It can best be defined as that branch of the healing art having to do with the prevention or correction of deformities and the preservation or restitution of motor function.

There are two kinds of deformities: the congenital, or those with which an individual is born, and the acquired, or those which develop subsequent to birth. In one of the large clinics for the care of crippled children the congenital deformities represent about one fourth of the cases.

When one studies the science of embryology and considers the marvelously complex process by which the human being develops from a single cell into a complete individual, the remarkable fact is not that there are occasional failures in the proper development, but that such failures are not more frequent.

A POPULAR misconception concerning congenital malformations is the belief in "marking" an infant during the period of pregnancy. In spite of occasional coincidences of this sort, there is absolutely no evidence that this occurs.

Another error frequently encountered is the idea of the inheritance of acquired characteristics. Congenital deformities frequently are inherited, but those acquired subsequent to birth do not affect the individual's children. The appreciation of the truth of these facts would probably prevent much apprehension and mental suffering by prospective parents.

Obviously, little can be done in preventing congenital deformities other than by the application of laws of eugenics. This is an extremely complicated social problem. Something definite can be done, however, to minimize the effects of these deformities. The two most common congenital deformities, which together make up the larger part of all deformities of this group, are congenital clubfoot and congenital dislocation of the hip. In both of these conditions early recognition and immediate treatment make the difference between complete cure in a large proportion of the cases and a more or less disabling permanent deformity. This is particularly true in the case of the congenital dislocation of the hip. It has been the experience of large orthopedic clinics all over the world that when these conditions are treated before the child has started to walk, almost all are cured. The proportion of successful results decreases progressively until after the age of 8 years only the exceptional cases show complete relief from the disability.

Consequently it is obvious that early diagnosis is of paramount importance. Fortunately the deformity of congenital clubfoot is perfectly obvious even on superficial and untrained examination. Congenital dislocation of the hip, however, is not so simple to recognize. Every new-born infant should have a careful examination for this particular defect, and if there is any suspicion of disturbance, x-ray pictures should be taken. Any delay in walking or any limp when the gait is established should make the parent suspicious of possible trouble of this nature.

ACQUIRED deformities may be divided into three groups: those due to injury, which are called traumatic; those due to stress and strain of activity, which are called static, and those due to disease, which are called pathologic.

Traumatic disturbances include the obvious broken bones, fractures, sprains, strains, torn ligaments and muscles, and cut tendons and nerves. These may all result in impairment of motor function or in deformity and therefore are properly included in the field of orthopedic surgery.

The work of the various safety councils throughout the country in decreasing accidents of this nature is highly commendable and merits the support of every public minded citizen. A word of caution must be given concerning efforts to protect children from accidents of this nature. It must be remembered that normal activities are necessary for normal development, and it is important in spite of natural anxiety, not to overshelter children. Fortunately among children serious results from accidental injuries are comparatively rare. In one clinic where there is a maximum age limit of 14 years,

STATIC DEFORMITIES MAY BE DUE TO ROUND SHOULDERS, FALLEN ARCHES AND MINOR SPINAL TROUBLES.

deformities due to ordinary injury represent only about 1 per cent of the children. The incidence in the adult population is unfortunately much higher.

So far as children are concerned injuries incident to the process of birth are the cause of fifteen times as many disabilities. These are of two main types, those due to injury to the brain and those due to injury to the nerves of the arm. Both of these result in varying types of paralysis. Just as congenital deformities can be minimized by the proper selection of the matrimonial partner, so birth injuries can be minimized by the proper selection of the obstetrician. Prenatal care throughout pregnancy and the application of constantly improving medical skill will serve to reduce the number and severity of these conditions.

THE static deformities are those known as fallen arches, weak ankles, flatfoot, weak foot and broken arches, which are all popular terms representing the same fundamental disturbance, and also round shoulders and some of the milder types of spinal deformities. The primary cause of static deformities is usually the unequal development of antagonistic muscles, and the important preventive element is balanced symmetrical muscular development.

The third group, the pathologic deformities, are due to disease. They constitute about one half of the deformities seen in the clinic previously mentioned. By far the most important of these is infantile paralysis, or anterior poliomyelitis, which alone accounts for one third of all the cases admitted to this hospital. This terrible disease is both endemic and epidemic; that is, it occurs to some extent regularly, with periodic times of greatly increased prevalence. Children are much more susceptible than adults, but infantile paralysis may occur at any age. In this country the disease is more common in the late summer and fall than at other times, and from a preventive point of view large gatherings, particularly of children, should be avoided at these seasons of the year.

The transmission of infantile paralysis is apparently exceedingly rapid, and the avoidance of contagion is as difficult as in the case of measles. In only a small proportion of the individuals infected does paralysis develop, and consequently many of the cases are not recognized. Further, it is known that there are many healthy carriers of the disease. Recent experimental research gives increasing hope that a means of producing immunity may soon be possible.

However, even after the unfortunate individual is afflicted with paralysis the situation is not hopeless. Prompt and continued treatment can do a tremendous amount to lessen the disability after the disease has occurred. A large proportion of the severe deformities of the disease may thus be prevented.

The effect of public health measures is now seen in the encouraging decrease in the prevalence of tuberculosis of the bones and joints. A comparatively few years ago, this was the cause of most of the deformities encountered in children's hospitals. The efforts being made in the control of pulmonary tuberculosis, such as the eradication of bovine tuberculosis, the improvement of the milk supply, the examination of food handlers and the education of those afflicted with the disease, are effective in bringing about a steady decrease in the number of cases.

Another deforming disease which in recent years has shown a progressive decrease to the point of comparative rarity is rickets. Improved hygienic conditions and the recognition of the necessity of cod liver oil during infancy has reduced the disease from a common condition to an incidence of less than 4 per cent. The extreme bowlegs which were so common a generation ago, particularly among the children of the underpriviledged economic group, are now seldom observed.

MUCH has been accomplished toward decreasing the incidence of crippling disease as well as improving the situation of those unfortunate individuals who have been afflicted. Too often the public fails to realize that the medical profession is more interested in health than in disease, for the individual as well as for the community. Both physician and layman look forward to the time when the practice of medicine will not be, as Laennec said a century ago, "the cure of disease" but will be concerned primarily with the preservation of health, so that curative treatment will no longer be necessary.

P. A. D.
Prevent . . Asphyxial . . Death

THROUGH THE COOPERATION OF THE MUNICIPALITY

Part III

By Paluel J. Flagg

JAMES ANTHONY was just 12. He was a trifle stout. The boys called him "Fat." But there was nothing stupid about Jimmy. Whatever he heard or saw he remembered.

Having spent the last two years of his life in an atmosphere of alphabetical combinations, such as AAA, NRA and HOLC, he was quite pleased one day when he encountered a new combination, P.A.D. He was told that P.A.D. had something to do with saving the lives of persons who were in danger of dying because of suffocation or drowning or inhaling gas. He also found that P.A.D. brought back something else that he had heard, S.O.S., which was sent out by the ships at sea. Jimmy concluded that P.A.D. was the S.O.S. of persons who were becoming asphyxiated.

Jimmy also remembered that last year when he was at school the teacher had said something about the importance of first aid. As a member of the Boy Scouts he had often seen the fellows practice artificial respiration. Over the radio one night he had heard a description of the Schafer prone pressure method of artificial respiration. He had also watched a Red Cross demonstration on how to do artificial respiration. As a matter of fact, Jimmy had seen artificial respiration so often that he could do it in his sleep. Any boy, if he was not "dumb," thought Jimmy, could learn the prone pressure Schafer method because there were so many people explaining how to do it.

Jimmy's sister was a telephone operator at the hospital, and his uncle was an intern. Jimmy's father, who to Jimmy was the greatest man in the world, was a police sergeant.

One day last week, Jimmy was walking down from the Anthony apartment. He knocked on the door of Dick's house, one floor below. He had told Dick that he would call for him at 9 o'clock, and he expected an immediate answer. He knocked again, and there was no response. He tried the door and was surprised to find that it opened. As he stepped into the room he smelled gas, and looking into the kitchen, which was directly before him, he saw Dick lying on the floor, all alone in the house! Jimmy immediately stepped out into the hall and closed the door. Then he took a big breath of fresh air, opened the door again, holding his breath, caught hold of his friend's feet and dragged him out into the hall. Almost automatically, he rolled the boy over on his stomach, bent one arm under his head, put the other arm straight, straddled his hips and began the prone pressure Schafer artificial respiration he knew so well.

Meantime, the noise which he had made and his cries for help brought other persons into the hall. Jimmy was so well acquainted with artificial respiration that he didn't have to think how to do it. He could tell them how they could help him as he did his work.

"Telephone the police station, right away," he said to the man beside him. "Just tell the sergeant on duty, P.A.D., and then give him the address of this house."

In the meantime he kept up the artificial respiration, asked a woman to get a blanket and told other persons to rub the boy's hands and put his head back so that the air would come in and go out more easily.

ALMOST sooner than it takes to tell it he heard the siren of the ambulance and saw his uncle coming up the steps, two at a time, followed by the ambulance driver, who carried a box with some tanks. His uncle examined the boy, rolled him over on his back, looked into his eyes and felt his jaw to see whether or not it would wiggle up and down.

"Has he breathed at all?" he asked Jimmy. Jimmy shook his head.

The doctor then reached his hand to the ambulance driver who gave him a pocket flashlight with which he carefully examined the boy's throat. At the same time he reached for a tube that the ambulance driver handed to him and put it into the throat. Jimmy heard a sucking sound as the tube went down.

"Completely relaxed," said the doctor. "Let me have the tube."

Putting the flashlight a little further into the boy's throat, he took another good look and very gently put the shiny tube way down into Dick's throat. Then he turned a little handle on the tank and covered the end of the tube with his finger. Almost immediately the cherry and blue color of the boy's lips and ears began to change to a bright red. He moved his head a little and winked his eyes.

"Ready," said the doctor, and with the tube in his throat the patient was put on a stretcher, gently carried downstairs and put into the ambulance while the doctor continued to give him oxygen through the tube. The ambulance door slammed shut, and Jimmy stood watching the big car as it swung down the street toward the hospital.

THAT night at the dinner table he thought he would surprise his sister and his dad by telling them what had happened and what a hero he was. After listening to all that he had to say the sister quietly said:

"Well, if it hadn't been for me the message wouldn't have gotten to the doctor or to the ambulance or to anybody. You know, at the hospital in each hall and in the operating room there is a green light which has P.A.D. on it. If the doctor is in the operating room assisting the surgeon the nurse takes his place when the light is flashed, and he hurries to the ambulance, which has already been flashed with the same signal and is ready to start. If the doctor is out we have the names of two or three practicing physicians near by who are on call for P.A.D. emergencies. All I do is to call the doctor's office and say, 'P.A.D. calling. Please stand by.' Then I give the address and receive word that the doctor is either free to go or that he is engaged. He doesn't have to bring any equipment with him because he meets the ambulance at the spot with all the equipment he needs."

"That's all very well," Jimmy's father chimed in, "but if it wasn't for me the hospital wouldn't have the message. All such messages come to police headquarters first. We send out a P.A.D. call to our radio cars, to the rescue squad and to the hospital simultaneously. So, you see, we are all helping to save the little boy who would have died if Jimmy had not known how to do artificial respiration."

JUST then Jimmy's uncle walked in.

"What are you folks talking about," he asked?

"Oh, Jimmy was telling us about a rescue that he had, that you picked up and took to the hospital," said Jimmy's dad.

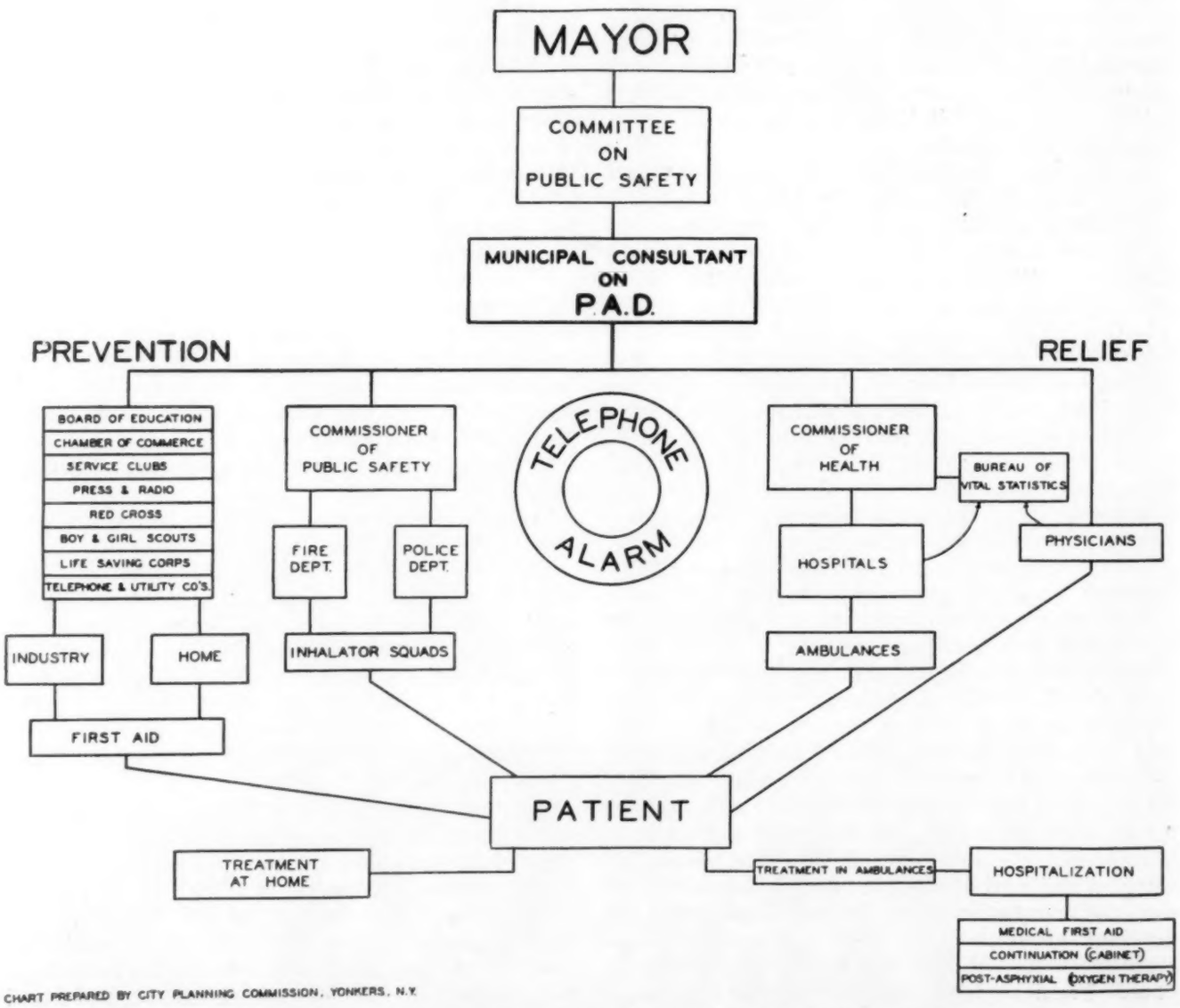
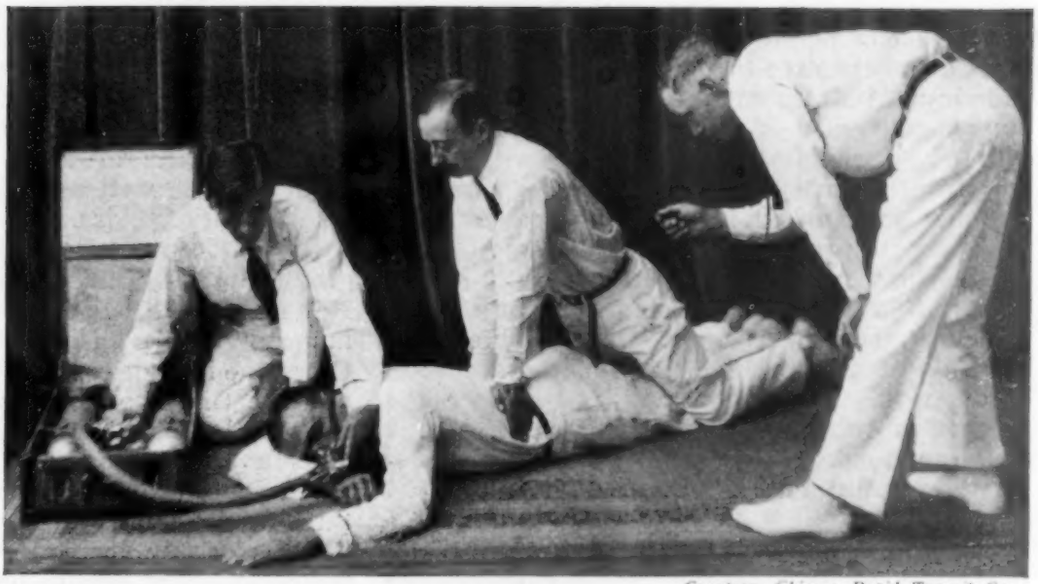


CHART PREPARED BY CITY PLANNING COMMISSION, YONKERS, N.Y.

THROUGH A CITY PLANNING COMMISSION, MUNICIPAL AUTHORITIES SET UP A PLAN FOR EFFICIENT COOPERATION IN P.A.D.



A MASK IS PLACED OVER HIS FACE AS HE LIES ON HIS STOMACH RECEIVING PRONE PRESSURE ARTIFICIAL RESPIRATION.

Courtesy, Chicago Rapid Transit Co.

"Oh, yes, that little boy from downstairs. When we got him back to the hospital he was still suffering from the effects of the gas, and we had to put him in the oxygen tent. He will have to stay there until the day after tomorrow so that we can make sure that there are no complications in the chest. When I was a medical student we did not take such good care of persons who were asphyxiated. We had nothing to work with on the ambulance, and when the patient recovered we left him where we had found him, to get better as best he might. Nowadays, things have changed and, thanks to everybody's help, your friend will probably be as good as ever."

IN ASPHYXIAL deaths the factor of time and the necessity of immediate action are vital. There are, as a rule, no preliminary warnings and no time to prepare for formal treatment. When a bone is broken or when a wound is inflicted the active, full and skilful treatment required may be postponed until the stage is set for expert care. Acute asphyxia permits of no temporizing whatever. The best and most skilful treatment available must be instantly applied, or death will promptly ensue.

For these reasons, rescue of the asphyxiated, especially where the physician is not immediately available, devolves on the layman trained in first aid. Furthermore, those who administer first aid must be so familiar with the mechanics of the necessary technic that they may apply this help automatically and be free to direct their attention to the unusual factor complicating the accident. To be specific, the correct prone pressure Schafer method usually employed must be so familiar to the operator that he can automatically throw himself into the correct attitude and rhythm, thus devoting his keenest attention to the signs exhibited by the patient, as, for example, the first feeble spontaneous efforts to breathe, evidence of foreign matter in the mouth and throat, and the color of the skin or the lips. The need of this automatism in artificial respiration has been thoroughly recognized in the organization, the training and the functioning of rescue squads composed of laymen. It is seen in action daily in the police and in the fire departments, in the utilities and in the industries, in the Red Cross and in the federal life guards. It must be remembered, however, that the aid offered by the rescue squad is but the multiplication of the effort of the individual who has familiarized himself with the prescribed mechanical procedure. Nothing essential is added by continuous treatment. It is important that this fact be understood so that the significance of individual effort be emphasized and every individual in the community, man, woman and child, be made to understand their personal responsibility in first aid.

THE rescue squad frequently adds to its sustained prone pressure Schafer technic the use of oxygen and carbon dioxide gas. These gases are administered to the patient by means of a so-called inhalator. To put the matter simply, a rubber edged mask is placed over the patient's face as he lies on his stomach receiving prone pressure artificial respiration. As air is sucked into the lungs by the recoil of the chest, it carries with it the oxygen and carbon dioxide contained in the mask covering the face. It must be realized that there is nothing mysterious about the complicated and heavy gas apparatus used for this purpose. A paper bag, filled with oxygen and carbon dioxide, would be as effective if it could be kept full of gas and closely applied to the face. The apparatus used is only for the purpose of supplying a continuous flow of gas and delivering it from a durable receptacle. The inhalator is not intended to supply a positive pressure; that is, oxygen and carbon dioxide are not and cannot be

blown into the lungs. They must be sucked in by the act of artificial respiration.

As an alternative to the use of the inhalator individual patrolmen in London and rescue squads composed of laymen carry small cylinders of pure carbon dioxide about with them. Gas from these cylinders is released near the patient's nose and mouth during prone pressure artificial respiration. A small amount of this concentrated gas, rapidly diluted with air, is sucked into the chest, tending to stimulate the patient's respiratory center. Owing to the small amount of diluted carbon dioxide absorbed through the act of artificial respiration, the method is quite foolproof, provided the gas is withdrawn as soon as the patient makes voluntary respiratory efforts.

THE first duty of the layman in the face of an asphyxial accident is to perform immediate prone pressure artificial respiration, and if he is familiar with the routine of this technic he can promptly think out and order other things to be done.

The usual procedure is to send out a telephone alarm. Custom has broadcast this alarm to the police station, thence to the nearest rescue squad maintained by the police or the utility, and also to the nearest available ambulance. The rescue squad answers at once. The ambulance, with a physician in attendance, then comes on the scene. The physician views the treatment being given by the rescue squad. If no special equipment for artificial respiration by positive pressure is available the services of the medical man are limited to giving hypodermic medication for the stimulation of the circulation, watching the patient recover or after many hours pronouncing him dead. Custom has decreed that treatment must be given at the site of the accident, the removal of the patient taking place only under the most pressing conditions. It has not been customary to insist on hospitalization of patients who recover at the site of the accident, and by its limitation, treatment en route to the hospital has not been practical.

With a view of demonstrating the shortcomings of such a system, a model arrangement for the municipal control of asphyxial accidents has been proposed by the City of Yonkers, County of Westchester, New York. Through the cooperation of one of its local hospitals suitable equipment for P.A.D. within the hospital and a specially equipped ambulance for P.A.D. occurring on the outside have become available. Through their city planning commission the municipal authorities have set up a plan of organization by means of which all groups and individuals involved may cooperate in P.A.D. In this plan the power of the mayor, the chief executive of the city, is brought to bear to assist the individuals making up the citizenry. This power, delegated to and through a committee on public safety, receives its specific direction through a municipal consultant, a physician familiar with the problem of asphyxiation.

The question of asphyxial death involving prevention as well as relief calls into play all the educational groups normally in contact with children and adults as well as those groups training individuals calculated to provide immediate relief in case of accidents in the home or on the field. These groups, the Red Cross, the industries, the utilities, the Boy Scouts and the Girl Scouts, may all serve to prevent asphyxial death.

As a distinct measure of public safety the authority of the chief executive functions through the commissioner on public safety and the thoroughly trained rescue squads of the police and fire departments. It will be seen, therefore, that prevention and first aid of asphyxia may be placed in the hands of the layman, from a theoretical as well as from a practical point of view.

ACTUAL relief of the desperately ill patient is, as it has always been, the privilege and the duty of the physician. Not only must the physician be equipped to meet by modern and scientific methods, asphyxial accidents occurring in the course of his medical routine, but he should be equipped to treat, by modern methods, cases attended by ambulance. Medical first aid provides means for inspection of the patient's airway, suction to remove foreign matter, and oxygen and carbon dioxide under pressure for introduction directly into the patient's nose, mouth, throat or lungs as the case may be.

The work of the physician must complement the work of the layman. It must carry through to its ultimate objective the demand for the maximum support and stimulation of the respiratory center with the least possible delay as well as the continued support of the circulation.

Furthermore modern medical apparatus permits and encourages immediate removal of the patient from the site of the accident, and his treatment en route to the hospital.

Recent medical research has demonstrated the desirability of suitable treatment following asphyxial accidents to prevent chest complications. Facilities must be provided for such care by a catheter or tent service.

Some cases, such as poliomyelitis, drug poisoning and alcoholism, require prolonged artificial respiration. A negative pressure cabinet or iron lung should be available in the community for such cases.

[NOTE.—In the April issue, Dr. Flagg will present "P.A.D.—A Problem of the Future," the concluding article of this series.]

VARICOSE VEINS— Their Cause and Cure

By HILBERT F. DAY

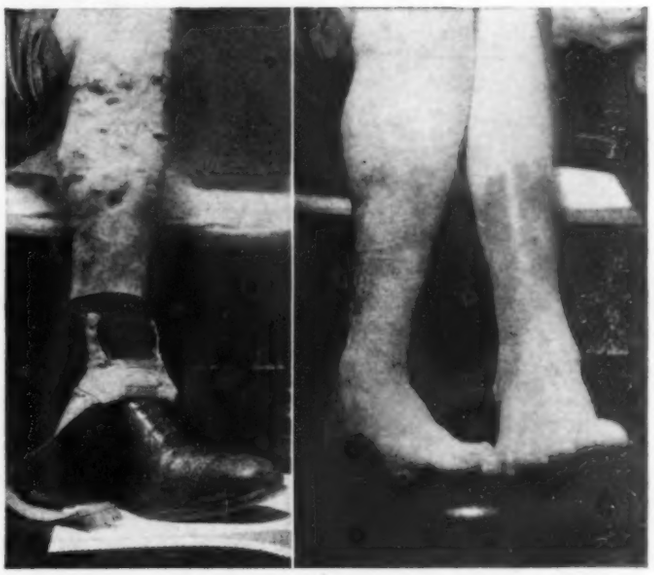
TIRED legs are due to many causes, but the most frequent cause is varicose veins, a condition resulting from a variation from the normal circulation in the veins of the legs. Some other causes of tired legs are flatfoot, heart or kidney disease, and diseases of the bones, arteries or nerves.

Flatfoot may result from lack of proper exercise for the feet or from congenitally poor arches. Ill fitting shoes are also a cause of tired legs. Heart disease may become so serious that the heart is not doing its whole work. Then there is a secondary swelling of the limbs with an increased amount of fluid in the tissues, which is known as edema. Certain kidney diseases cause edema when the kidneys are not functioning sufficiently well. Chronic infection of the bones of the legs usually follows an injury.

The best medical men are now in complete agreement that no treatment of varicose veins should be begun unless it is preceded by a thorough physical examination.

Physical examination should include a careful history of the patient and his family, particularly his parents. It is interesting to know whether either the father or the mother suffered from the same symptoms as the patient. The examination should include temperature, weight, height, urinalysis, blood pressure and examination of the heart, lungs and abdomen. The examination of the abdomen is important, particularly to rule out the possibility of some abdominal tumor causing pressure which in turn might aid in the development of varicose veins or cause swelling of the limbs.

In order to understand varicose veins it is necessary to have an idea of what the circulation of the leg normally is, for varicose veins are abnormal. The arteries of the body and of the limbs carry blood away from the heart and into the tissues of the body to support and nourish them. The blood which flows through the arteries is rich in oxygen but becomes changed after it passes through the tissues at a distance from the heart. This blood returns to the heart through veins. The arteries are essentially pipes which have no partitions or valves in them. The flow of blood through these arteries is a matter of direct transmission from the heart. The veins, on the other hand, are thinner-walled pipes and, in order to prevent back flow, have valves which normally allow the passage of blood only in one direction; that is, toward the heart. When these veins become stretched the valves become incompetent or are destroyed, and the column of blood then falls back by the force of gravity into the smaller branches of the veins. Because blood is not promptly removed there is a gradual destruction of the tissues which it is supposed to nourish. These large valveless veins are useless because they then fail to function as veins in carrying blood toward the heart. In fact, the circulation that remains is often in the reverse from normal direction. Therefore the patient would be much better off without these varicosed veins.



THE LEFT PICTURE SHOWS VARICOSE VEINS AND SMALL ULCER. RIGHT, THE SAME LEG FIVE WEEKS AFTER TREATMENT BEGAN.

How will blood from the legs get back to the heart if the veins are not working? Fortunately there is a double set of veins in the leg. Besides the superficial veins, which are covered only by fat and skin and become varicosed, there are deep veins situated between the muscles of the leg. The contraction of these muscles squeezes the blood upward in the proper direction and prevents enlargement of the deep veins. Veins that have become varicosed are in reality reser-

voirs of stagnant blood. This being so, it is correct to advocate their obliteration or removal.

A natural question which also might arise is, How do these veins happen to become diseased? It is apparent that a certain proportion of people are born with weak-walled veins. In other words, they inherit veins which easily become overdistended and are unable to perform their natural function. In many persons, varicose veins develop from undue pressure, such pressure as might occur during pregnancy or because of an abdominal tumor or from straining and lifting. Restricting bands around the legs, such as tight garters, are often a cause.

Varicose veins may be recognized as large, irregular, blue channels, standing out from the lower leg or thigh, and popularly known as "very coarse" veins. One may notice one or two such veins in the calf and pay little attention to them, but the destruction inevitably progresses. The first symptom noted is usually aching in the legs, which develops a few hours after standing and increases until there is acute fatigue. The problem would not be so important if the disease stopped at this point, for a bandage or stocking could be worn to give extra support to the circulation and overcome the symptoms of fatigue. Many persons, not caring to take even that trouble, leave these large, visible veins untreated. Toward night they are apt to find a little swelling of the ankles, which disappears during rest and reappears the next afternoon.

THE next step is a discoloration of the skin due to the continued bad circulation and poor nourishment of the tissues. An itching condition with roughening of the skin develops, which is called varicose eczema. If allowed to go untreated the eczema may be carried into the next phase when there is an actual breaking down of the tissues and an ulcer formation. Finally the sufferer has a disagreeable, discharging sore on the leg. This generally brings even the most neglectful person under the doctor's care.

It is natural to ask how such unhappy results could have been avoided. Sometimes they cannot be avoided, but if one is careful not to restrict the circulation of the leg by tight garters and takes care to support leg circulation by proper bandaging when necessary, some of the destruction can be avoided.

Satisfactory treatment of varicose veins is aimed toward doing away with and preventing these useless channels. If leg fatigue is due to varicose veins it can be somewhat relieved by proper bandaging; but this means daily and proper application of a supporting bandage. Elastic stockings are satisfactory only for a short time because they stretch and do not adequately support circulation. Bandages, elastic stockings, laced canvas stockings and similar devices are useful as supports for the blood circulation, but they are not curative. To cure the patient, varicose veins must be removed or obliterated because they cause normal circulation to be reversed; that is, blood is being held in the diseased veins rather than being carried toward the heart.

Twenty years ago the only method for removing varicose veins was by surgery. At that time an extensive operation with incisions from the foot up the lower leg to the thigh was done. This left the patient with tremendous scars up and down the leg and entailed a two week stay in the hospital. Even then new veins might develop, and after a period of time this process might have to be repeated.

ABOUT ten years ago the medical profession became interested in the injection method of treating varicose veins which was being largely used abroad. By this means an abnormal vein was injected with fluid which would destroy the walls of that vein and form a sterile clot. This clot stayed in place because the frayed lining of the vein became intimately involved in the clot. When the sterile clot had thoroughly healed, the vein as a channel was destroyed and finally contracted to a threadlike cord. This method has proved eminently successful under proper circumstances.

At first only one vein was injected at a sitting. Now it is possible to inject many veins, thus diminishing the number of times the patient has to have treatment. The great advantage in this method of treatment is that it is essentially ambulatory; that is, the patient does not have to give up his ordinary routine of life but can go to the doctor's office for a treatment and return to his regular occupation. Treatment should continue until all varicose veins have been successfully obliterated. After three or four treatments the relief of fatigue in the legs and the absence of visible large veins make the patient think that he is cured, and he may stay away until new veins appear. New veins will appear unless the complete channel of the diseased or dilated vein has been cleared away. Therefore adequate treatment, controlled by the doctor, is absolutely essential. The patient may have to go back to his doctor at two or three year intervals for a check up.

In certain cases it has been found advisable to combine a minor operation with the injection of large veins of the lower leg. This operation involves the tying off of the superficial system of veins of the legs at its upper limit. This can be safely and painlessly accomplished with the use of a local anesthetic, the patient staying in the hospital only twenty-four hours.

If the condition of the legs has become so bad that in addition to varicose veins there is an ulcer, the treatment of the ulcer should be given at the same time the diseased veins are being

destroyed. The newer methods of treating varicose veins and varicose ulcers have replaced surgery in many cases. Patients now receive treatment for veins in many instances before ulcers have appeared, and after ulcers have developed they are relieved more speedily and more permanently than they used to be.

Varicose veins are the most common cause of tired legs. This symptom can now often be relieved simply, practically painlessly and without loss of time. If you are suffering from tired legs, do not delay consulting a doctor. Let him find out why you are suffering and tell you how to be relieved.

THE BACKWARD CHILD

(Continued from page 213)

the city's best known sculptor took him for a pupil.

One morning near Christmas one of the older girls gave the class a surprise. She came with a doll and a complete wardrobe, including a crocheted cap and coat, which she asked to have sent to the children's hospital of the city. Not to be outdone, five other girls got the inspiration, and with the aid of the older pupil, five pretty little outfits were sent on their errand of happiness.

Surprising and unexpected experiences are in store for those giving guidance and training to the atypical child. Some are unpleasant and disappointing, but many more by way of compensation are pleasant and happy. In order to develop nature's gifts so unfortunately hidden in the atypical child those in charge of him must never forget that at no time does he adjust himself to others or to his environment. Conditions and personalities must be made to fit him.

An unusual amount of patience must be developed on the part of the instructor. To learn to step down out of a normal, high-geared mental life into the slow, hesitating, abnormal mental life of the atypical child is a most difficult task. Intense fatigue, physical and mental, may precede a feeling of irritation and nervousness which may lead to the slapping of seemingly stubborn and impudent children. Following such a mistake comes the complete demoralization of the whole group. The children are easily excited. Overcome by anger and fear they will retaliate by hurling the nearest thing at hand; so the conflict becomes a losing fight on the part of him who did the slapping. A smile is of tremendous value when used in working with the unstable, atypical child. A smile may mean the difference between failure and success to him, and success is the thing he must have. Clouds of disappointment gathering on his face vanish instantly if the instructor in a kindly, pleasant manner shows him where he may make a mistake if he does not watch a little more carefully or take a little more pains. When a child gets to the point where he does not want to be told how to do things the teacher must smilingly merely ask him questions about the task at hand. He loves to tell her how to do it. Questions from her, information and advice from him, and after a nerve racking time on her part, the work has been brought to completion.

Another pleasure in store for the instructor is the equipment found in the rooms. However, if she is not manual minded, skilled in arts and crafts of all descriptions, the trip of discovery into the lives of these children will mean nothing to her, and endeavoring to apply formal school methods will bring absolute failure. With the splendid equipment of the room at her disposal a teacher not only enjoys herself immensely but communicates some of the enjoyment to her charges. She enjoys watching feeble, characterless hands take on sureness and skill; but her greatest enjoyment consists of the changes brought about in the personality and character of the children through the happiness and taste of success produced in them with this very equipment.

With the slowness of a slow-motion picture a boy becomes a good school citizen. A boy who never did anything well in his life up to the time he entered a special room may find himself the best of the group, or of the whole school for that matter, in some respected line of endeavor. Moreover, the night gangs lose their charm for him after his thirst for adventure has been satisfied by the many fascinating stories read to him from wholesome books. He learns about people and places in the most satisfying manner, and from a good school citizen he becomes a fairly good American citizen. He has learned "stick-to-itiveness," a type of dependability, loyalty, patience and honesty.

Following up these children as they grow into adulthood discloses the fact that they become for the most part successful humble workers and that the character equipment they have acquired during the long years in school, from seven to sixteen, holds good. Watching them at work calls to mind a statement made by one of the deans of the University of Cincinnati, that he would rather have a boy of defective mind who would work than a boy of bright mind who wouldn't work. Teach a boy of defective mind how to work and he becomes an adult who dislikes to loaf.

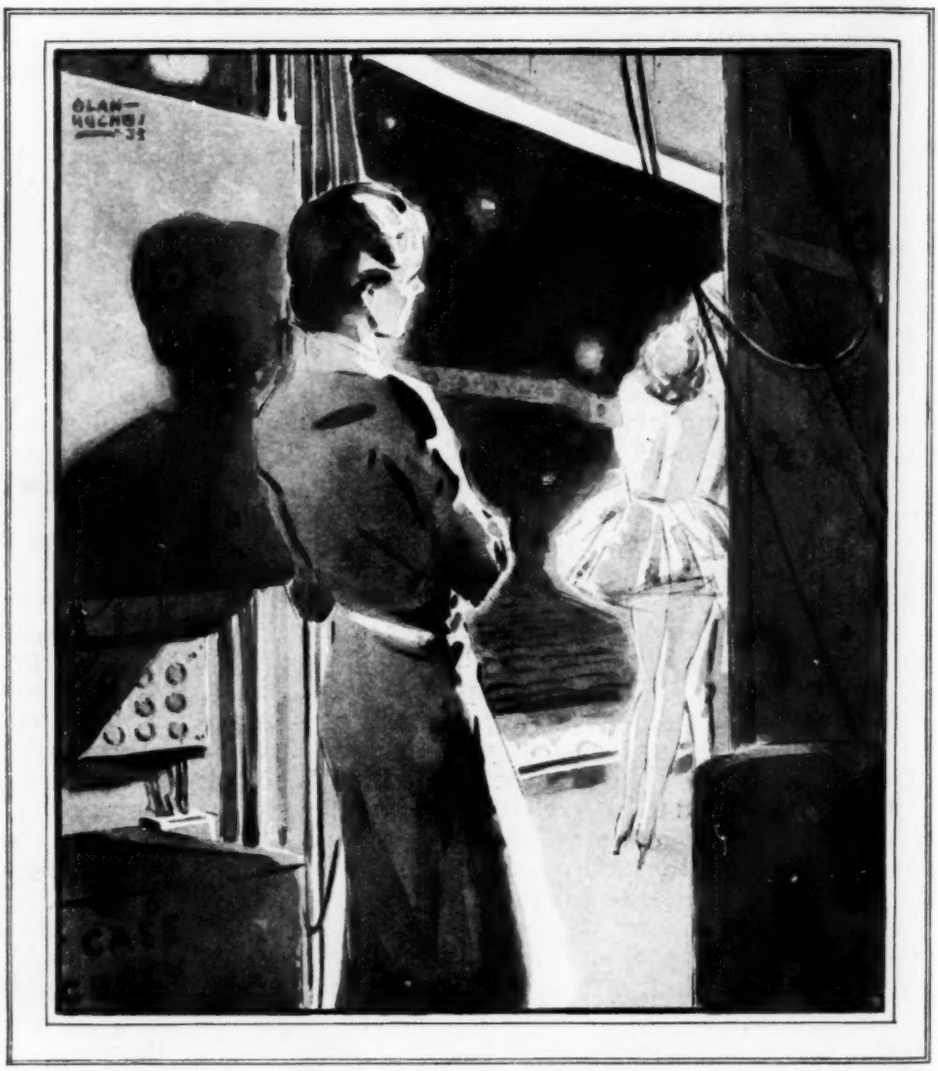
The Case of the Coryphée's Cousin

Chapter X
of

THE DOCTOR'S SCOTLAND YARD

By

Robert A. Kilduffe



SHE HAD TAKEN DANCING LESSONS FOR A NUMBER OF YEARS, BUT AS SHE WAS UNABLE TO GET A JOB ON THE STAGE SHE HAD SECURED WORK AS A TICKET SELLER IN A MOVING PICTURE THEATER, AND THIS KEPT HER IN TOUCH WITH THE THEATER AFTER A FASHION.

IN THE selection of cases illustrating Dr. Trebor's adventures in the detection and pursuit of disease, it has been my deliberate intention to avoid the bizarre and sensational. While these cases may be encountered in the experience of almost any physician, I have endeavored to show how surprising may be the final elucidation of diagnostic problems which, as they first present themselves to the physician, do not suggest any obvious hint of their inherent complexity.

The almost inexhaustible data gathered from our discussions have made selection difficult, for all the cases, it seems to me at least, have been of interest. From this difficulty Dr. Trebor has been singularly free, for his stories arose quite naturally from some phrase or incident occurring in our casual conversation.

For example, as we had all served in the World War it was inevitable that, from time to time, some reference to this crept into the conversation; and, as each one of us has his own particular pair of spectacles through which he looks at the world, it was quite natural that Trebor should remark, now and then, on the influence of war on the incidence of disease, as well as the influence of disease on the results of campaigns and battles. From this point the conversation drifted to some discussion of disease in the civilian population directly or indirectly related to war, perhaps the most obvious illustrations of which are the nutritional defects consequent on failure of food supplies. With the existence of these most of us are somewhat familiar, but both Inspector Carey and I learned with distinct surprise of a certain remote, potentially dangerous aftermath of the World War with which people are even now confronted. This Trebor illustrated with a story which he suggested I might call "The Case of the Coryphée's Cousin."

Carey, I might add, objected rather strenuously to the term "coryphée" because, as he frankly admitted, he hadn't the remotest idea

what it meant. He remarked rather testily, "If you mean dancer, why not say so?" But when Trebor gently reminded him of the somewhat remarkable argot common to his field he only resorted to what might be called, in less polite circles than our own, a snort. In the end, however, both Trebor and I being somewhat fond of alliteration, "coryphée's cousin" it remained.

It all began in this way. The clinical pathologist in the hospital may properly be regarded as a sort of liaison officer between the laboratory and the wards. His proper function as well as the source of his greatest value is, when called on, to assist in the interpretation of the laboratory observations in a particular case and occasionally to observe cases in consultation with the attending physician so that from the results of his observations he may suggest special laboratory examinations applicable to the diagnostic problem at hand. It was while acting in such a capacity that Dr. Trebor encountered the patient whose story I am relating.

She was a girl in her early twenties who had come to the eye dispensary because of blurred vision. Even superficial examination revealed a marked decrease in vision which was found to be due, not to the usual defects to be expected in one of her age, but to the fact that cataracts were beginning to form.

As Dr. Trebor explained, part of an eye examination consists of looking into the depths of the eye with an instrument known as an ophthalmoscope. This is an affair with electrically illuminated lenses which enables the physician to look through the pupil into the eye and observe the internal structures and so on.

Now the structure of the eye, as Trebor described it to us, in many respects resembles that of a camera. The pupil may be likened to the shutter which admits the light, while the film in the camera is represented in the eye by what is called the retina. This is a thin layer of highly specialized cells derived from the optic nerve. It covers the back part of the eye and, like the film or plate in the camera, receives the image. In order to distribute the light reflected from the image on to the film the camera has a lens. As any one interested in photography knows, the better the lens, the better the camera.

In the same manner and for essentially the same reasons the eye also has a lens. This is a most interesting structure, situated between the pupil and the retina and consisting of a capsule which, of course, is transparent. Behind the lens is a structureless, translucent material called the vitreous humor, "vitreous" being derived from the Latin word meaning glassy.

Since the eye lens, or crystalline lens, has to be focused, it is slung by small muscles which change its shape by relaxing or contracting and thus focus it. Under various conditions, in connection not only with certain diseases but also with senescence, this crystalline lens may become clouded. If the condition progresses, as it usually does, it may even become a stony hard mass which, being opaque, prevents the passage of light. Quite obviously in the early stages such a condition materially interferes with vision and eventually causes blindness.

The cloudiness and hardening of the crystalline lens is called a cataract from a Greek word which means "a closing down," suggesting, as it were, the falling of a curtain.

Now cataracts in themselves are not rarities, but, as Trebor pointed out to us, they are decidedly unusual in young persons. Their occurrence in this particular case was an event quite out of the ordinary and one for which some explanation must be sought. It was in the hope that some explanation might be found through the laboratory that Trebor's assistance was sought.

"Don't young people ever get these things?" asked Carey.

"Yes, they do," replied Trebor, "but there is usually a rather obvious reason when cataracts occur in the young person. Injury, for example, is perhaps the most common cause. Then too they may occur, though infrequently, as an aftermath of certain diseases, diabetes and nephritis, for example. So, as you see, the young can have cataracts."

"Well," retorted Carey who was evidently determined not to be caught napping, "I'm pretty sure of one thing, and that is that this girl hadn't had any of those diseases and probably hadn't had a sock in the eye either."

"You're quite right!" Trebor agreed imperturbably. "She had never had anything which might have left her with any kidney disturbance. We proved by means of laboratory examinations that there wasn't any such disturbance. If you must know," he continued just a little too casually, "this thing was an indirect result of the World War."

"What!" Carey almost shouted. "Why, she was hardly born then!"

"Right again!" grinned Trebor.

"I thought I was proof against surprises," I interjected, "but this one takes the prize. Of course," I added with what I think was a permissible tinge of sarcasm, "I knew that an omniscient Congress has decreed that almost any illness in almost anybody might have been caused by the war, but I really did think—you must pardon my innocence—I really did think that at least the victim had to be born in time. Trebor, if I didn't know you, I'd think you were spoofing us, by Jove!"

"One of the worst things I know of that came out of the bloomin', bally war," mimicked Carey, "is the horrible English accent you think you brought home with you. Now no fooling, Doctor! How on earth did this thing have any relation to the war and, if it did, how did you ever get a line on it?"

"No fooling, Inspector," Trebor replied with great solemnity, "it did, and how we got on to it is what makes the story."

"Well then, let's have it," said Carey. "I'd like to get the answer to this thing if it keeps me up all night."

"I haven't any intention of staying up even half that long," smiled Trebor, "so we'll start right in and make it snappy. Now there we were, confronted with something which, on the face of it, should not have occurred, but which happened nevertheless. While there wasn't any apparent reason for it, things don't just happen; so there had to be a reason, and it was up to us to find it. To do that we took a leaf out of your book, Carey. At least, we did just about the same sort of thing you would do if you were confronted with a similar problem. And that takes us right back where we started from; that is, to the comparison between the criminal and disease and the doctor and the detective.

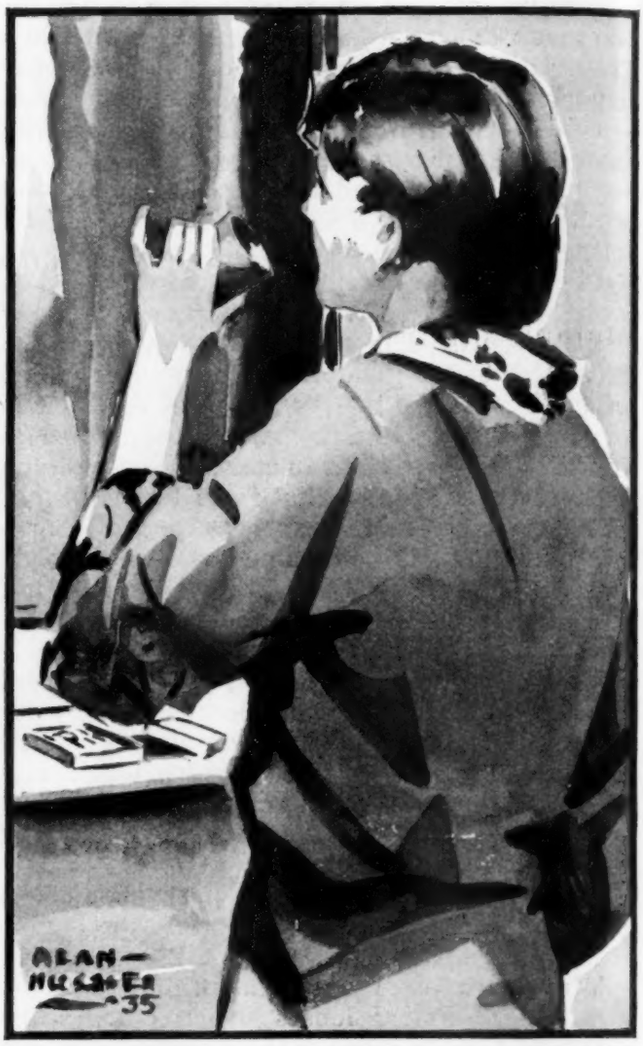
"We had discovered the crime, the cataracts, and we had been over the scene; that is, we had examined the patient thoroughly. The net result, however, was practically nil. We hadn't a clue, so to speak. Since we've managed to pry a tale or two out of you too, I can use your language to some extent at least. The next thing to do, lacking sufficient information or, indeed, much information of any kind, was to throw out the dragnet, so to speak, round up everything we could and see what it might all add up to.

"So we started in all over again by beginning once more with her history. It's a peculiar thing, but when you start asking people about themselves and the various things which have happened to them in a medical sense, you often have a great deal of difficulty in getting a clear and connected story. Sometimes they just don't remember; sometimes they pass over as unimportant the very thing that holds the key to the problem, and sometimes they deliberately leave it out for one reason or another. For instance, on being asked when the illness began, the the patient may answer, 'two days ago,' when as a matter of fact, persistent questioning brings out the fact that he really began to feel somewhat 'out of sorts' ten days before.

"The average person is not deliberately trying to deceive, but he doesn't begin to think himself sick until he feels too badly to do his regular work or has to go to bed."

"Aha!" I interrupted. "So it was a case of 'You won't talk, eh!' What did you have to do, give her the third degree?"

"No, no! I just let myself be led into a little digression. No, she wasn't holding out on us or trying to deceive us wilfully. We simply hadn't delved into the history deep enough. Now one of my little peculiarities is a desire to know the patient's occupation, not only the one he has now but, if he has not had it very long, what



SHE FOUND THAT, HAVING BEEN MORE OR LESS DISCOURAGED AND HAVING NEGLECTED TO PRACTICE, SHE WAS NOT ONLY AWAY OFF IN HER DANCING BUT, WHAT SHE CONSIDERED WORSE, SHE WAS OVERWEIGHT, WHICH DIDN'T MAKE DANCING EASIER EITHER. SO YOU KNOW, OF COURSE, WHAT HAPPENED.

was the one before that and, sometimes, even the one before that. Usually the information doesn't mean anything, but once in a while it furnishes the 'pay dirt'—and this was one of the times."

"I suppose this one's occupation was giving the boys the stony glance," said Carey with a somewhat heavy attempt at humor which both Trebor and I elected to ignore.

"This girl," Trebor continued after a mock severe glance in Carey's direction, "was working as a ticket seller in a moving picture theater, a job which she had held for the better part of a year. In the course of conversation it turned out that she had always been interested in the theater and had taken dancing lessons for a number of years with the idea of going on the stage. As things were, she found herself unable to get a job in that line, and, as the next best thing, she had secured this job that kept her in touch with the theater after a fashion.

"Just to show you what a roundabout path a clinical history may take before it gets anywhere, I'll explain that she had a cousin who

was a dancer on a small time circuit and who now and then, when she was lucky, formed a part of the shows which the larger movie houses add to their bill. She and her cousin were quite friendly, and this girl was always after the cousin to get her a job on the stage too. Until rather recently there had not been even a remote chance for her. But several months before her admission to the hospital, her cousin had written that there was to be a troupe formed to work in a large moving picture theater, that she was going to be one of them and that she felt pretty sure that she could obtain a job in it for this girl too.

"Well, of course, she was delighted at the prospect, but she ran into difficulty right away. She found that, having been more or less discouraged and having neglected to practice, she was not only away off in her dancing but, what she considered worse, she was overweight, which didn't make the dancing any easier. So you know, of course, what happened."

"Now wait a minute!" interrupted Carey straightening himself in his chair. "You've trained me to be ready to believe just about anything, but if you start to tell me that dieting gave this kid a couple of stone eyes, well it's going to be pretty hard to swallow—and that's putting it mildly!"

"We might as well make it unanimous. That goes for me too," I added, although just a little dubiously for I never knew Trebor to tell us anything he couldn't back up with the evidence.

"This hurts me," laughed Trebor. "Just when I thought you both had such perfect confidence in me, too. I will not mislead you, gentlemen. This was not the result of dieting."

"I just wanted to put myself on record," Carey grinned back at him. "I know it's going to be goofy, but that would be just a little bit too goofy for any one. Go ahead. I'm ready for most anything, except a diet of pebbles or cement."

"In spite of all my efforts you fellows will jump at conclusions. Of course, any one knows that restricting your food will help you to lose weight. The trouble is that it is neither enjoyable nor easy to do and, which leads to more foolishness than you have any idea of, it doesn't always produce results quickly enough. If it did, there wouldn't be drugstore windows full of advertisements and displays of this, that and the other preparation, any one of which, according to their announcements, will enable any one to lose weight easily, rapidly, painlessly and so on, *ad nauseam*."

"Oho!" exclaimed Carey. "I begin to smell me a large mice, so to speak."

"And in the background," I added mystically, "I see the shadow of a box of 'Slimmo' or 'Leano' or 'Makeskinneo' or some other fool preparation. All is about to become clear to me!"

"I should hope it would," said Trebor. "That's exactly what her history developed. Perhaps 'developed' isn't quite the word for we really had to dig it out in more than one interview at that. You see, there wasn't anything unusual about that sort of thing to the patient so, of course, there wasn't any reason for bringing in all this personal history. For how could she suspect that here was the underlying and direct cause of her present condition? Just as we couldn't jump right into the answer to her problem, so we can't jump right into the explanation of it, either. There have to be some preliminaries first. So, first of all, you'll have to listen to something about this mechanism of gaining and losing weight."

"Well, I can do that," said Carey.

"Perhaps it wouldn't do you any harm," I murmured with a fleeting glance toward the vest region.

"Here we go, then," continued Trebor with just the slightest twinkle in his eye. "In a sense the human mechanism is a sort of an engine, and it burns fuel, food. How much food it burns and how completely it consumes it depends, naturally, on the amount of work that is being done. If an individual is active, which doesn't altogether mean physical activity alone, he uses up energy, the source of which comes from the fuel he burns. If he is using up a lot of energy, he uses a lot of fuel likewise.

"On the other hand, if he takes in more fuel than his energy requirements demand, he doesn't burn it all up, and the result is that he deposits some of it in the tissues in the form of fat.

"Now, of course, that is putting it rather simply, for we are not taking into consideration many things, such as various imperfections in the mechanism of absorption and combustion and other factors, which may be related to obesity.

"Probably one of the first things advised in connection with weight reduction is regulated exercise. Of course, exercise achieves greater and more perfect combustion of fuel, but it also leads to a demand for more fuel. Therefore the food supply must be regulated so that, as fuel must be had, it will be obtained from the excess amount stored in the body as fat. Are you following me?"

"Right on your heels," said I.

"Suppose we are sitting in your car, Carey," Trebor went on, "and, with the clutch in neutral, you race the engine. What happens? The engine races, and you burn more gas without getting anywhere. On the other hand, if you just let the engine idle you burn the minimum amount of gas to turn it over. If you wanted to get rid of the gas without making the car go you could do that by racing the engine, which, of course, wouldn't be improved by the process if you kept it up too long.

"Exactly the same principle applies to the human engine. If you want it to burn more gas you make it run faster. You can do that by exercise, but if you want to make it race without working, so to speak, then you push down on the gas pedal and race the engine, also without doing it any too much good. In other words, you artificially increase metabolic activity."

"Can you say that again in plain, simple English?" asked Carey.

"Yes, do," said I. "Make it plain for me and simple for Carey."

"Just think of the end of a swanky dinner," Carey retorted.

"Now that's what I call rather subtle," laughed Trebor. "In plain English, metabolism is the term we use to include the various and complicated processes by which energy is made available for the uses of the body. It may also be used in the sense of tissue change; that is, the sum of the physical and chemical changes by which living organized substance, in other words, the body, is produced and maintained. But in the special sense applicable to our purpose it refers to energy transformation. Now you may be sound asleep and absolutely motionless as a whole, but your heart and your breathing and all your various organs are working just the same. So, of course, you are using energy, and this minimal amount necessary to keep things going is sometimes spoken of as the basal metabolism. This can be measured in the laboratory and, indeed, forms an important procedure in the study of certain diseases, especially a condition known as goiter."

"Aren't those the big lumps some people get in their necks?" inquired Carey.

"Yes, that's one form of goiter. There are others, though, in which there isn't necessarily any large mass. A goiter, you see, means that there is a disturbance of function on the part of the thyroid gland, which lies in the neck. This is a specialized organ which has an intimate relation to the regulation of the human engine. It's a sort of a governor, so to speak. If there is too much thyroid secretion poured out, then the engine races, as it were, and after a while it begins to run queerly and you have all sorts of symptoms. On the other hand, if there is too little thyroid secretion, then again the engine doesn't run perfectly and you have another set of symptoms. That they are due to thyroid disturbance can be readily determined in the laboratory by measuring the basal metabolism."

"How do you do that?" I asked. "I've heard of people getting a basal metabolism reading, but it never meant much to me."

"And I never even heard of it," said Carey.

"It all comes back to first principles," Trebor answered. "You can't have combustion without oxygen, can you? Of course not, and, as a corollary, the more combustion there is, the more oxygen will be required. Now, we know just how much oxygen is required for the combustion necessary to carry on the basal metabolism, this amount varying with the age, sex and weight of the patient. The patient must be fasting, for the digestive processes mean increased work for some parts of the body. After he has rested for a sufficient time to come to a resting level, as it were, we determine how much oxygen he consumes in a measured period. If everything is in order, he should use no more than the basal metabolic requirements of such an individual demand. If he uses up more or less than that, then his machinery is not running under proper regulation, and there you are!"

"You may be somewhere," said I, "but I don't know if I'm there with you. You told us once, I think, that every person was different—that we weren't standardized machines. Well, if that's so, how can we all come out a standard size in this basal metabolism thing?"

"We don't. Remember, I said the basal requirements varied with the individual. Moreover, you can't measure the basal metabolism to the very inch, as it were. Anything between plus 10 and minus 10 is within normal limits; that is, plus or minus 10 per cent of the imaginary strictly and theoretically normal oxygen consumption."

"This is all interesting," said Carey, "but has it anything to do with this case?"

"It certainly has," replied Trebor. "You see, as a part of a thorough survey of this girl we did a basal metabolism reading on her and found that it was high. Well, that at once gave us something to look into. We found absolutely no evidence of any disturbance of the thyroid gland. So what? You know, I told you once that a doctor has to keep a lot of things in mind besides the purely technical part of medicine. He has to consider people and their vagaries and the things they do. Now we know that women are more or less idiots about this weight matter. Confronted with a high metabolic reading and knowing that thyroid is frequently used as a means of what women call 'slimming,' I believe, it wasn't much of a trick to ask our patient whether she had been reducing and, if so, how. And that simple question led to all the roundabout story that I have just been telling you."

"I will now take the floor and explain this matter to you," I said to Carey grandiloquently. "Observe closely, and see how a really trained mind does its stuff. You see, when they take these thyroid preparations it races the engine. When the engine races, it burns more gas than is necessary. So not only does it burn up all the food fuel taken in, but it burns up the fuel stored in the tissues as fat. Consequently the ladies become slim and beautiful after only three boxes of my mar- *(Continued on page 246)*

ON MAY 21, 1928, NOGUCHI CONTRACTED YELLOW FEVER WHILE RE-EMBARKING FOR AKKRA. HE WAS TAKEN ASHORE. ONE CONVULSION AND HE WAS GONE. "BUT NO, HE IS NOT GONE. NOT FROM THE MEMORY OF MEN, AND NOT FROM BEYOND THE MEMORY OF MEN."
(GUSTAV ECKSTEIN)
SPIROCHAETA PALLIDA - THE GERMS OF SYPHILIS.
MEDIAN SECTION OF THE HUMAN BRAIN.
NOGUCHI PROVED THAT PARESIS, OR GENERAL PARALYSIS OF THE HUMAN BRAIN, IS CAUSED BY THE GERMS OF SYPHILIS
NOGUCHI
= MARTYR OF SCIENCE =
NOGUCHI DIED THAT OTHERS MAY LIVE.
ADOLPH BEILIN

HIDEYO NOGUCHI

(1876-1928)

A Distinguished Bacteriologist and Master Mind of Medicine

By ADOLPH BEILIN

THE HISTORY of scientific medicine is intertwined with the lives of the great contributors to its progress. From the time of van Leeuwenhoek and Harvey to Ross, Bruce, Koch and Noguchi the status of medicine has continued to move steadily forward. The life and work of Hideyo Noguchi is akin to sheer romance; and it is difficult to reflect on his character and phenomenal achievements without waxing eulogistic. The brilliant accomplishments of this remarkable man belong to a familiar history of martyrdom to science.

Noguchi sacrificed his life for the welfare of mankind. At the age of 52 he had joined the long roll of other martyrs of medicine, after completing an investigation into the cause of yellow fever in West Africa. Before he died from its effects, May 21, 1928, his work had been completed and he had made another great stride toward the conquest of yellow fever, which had so long terrorized mankind. Medicine boasts few more heroic achievements.

Noguchi was born at Oginashima, Japan, Nov. 24, 1876. After completing his early medical training in the University of Tokyo, he entered Sai Sei Medical College, passed his final examinations, obtained a license to practice and became an assistant at Zuntendo Hospital in 1897. In the following year he served as assistant in the Government Institute for Infectious Diseases. In 1899 he was made quarantine officer at Yokohama, Department of Interior. In the same year he went to China as the director of the Laboratory Hospital of the International Sanitary Commission, New Chwang. In 1900 he returned to Japan. On December 5 of the same year he embarked for America, where he became assistant in pathology at the University of Pennsylvania. From 1903 to 1914 he was successively research assistant at the Carnegie Institution of Washington, D. C., and at the State Serum Institute, Copenhagen, Denmark, and a member of the Rockefeller Institute, New York. From 1919 to 1928 he lectured and pursued his studies in Equador, Mexico, Peru, Germany, Austria, Sweden, England, France, Yucatan, Brazil and Africa.

A man of excellent character, sharp intellectual perspicacity and lofty ideals, Noguchi

possessed also a remarkable inventive genius in the development of laboratory technic, which enabled him to make many important discoveries in various branches of medicine.

It is impossible to estimate here the full significance of Noguchi's contribution to medicine. Among his many achievements, he demonstrated that dementia paralytica, sometimes referred to as "softening of the brain" or general paralysis of the insane, is due to syphilis. To prove this, he transmitted syphilitic infections to rabbits by inoculation of brain tissues from deceased victims of dementia paralytica; and he established the scientific relationship of syphilis to locomotor ataxia. He solved the cause of oroya fever, isolated the micro-organism of trachoma and obtained a pure culture thereof. He also discovered the germ of infantile paralysis.

The significance of these achievements, along with many others, is exemplified by the numerous honors, awards, titles and degrees which were conferred on him by most of the great governments and universities of the world.

The Case of the Coryphée's Cousin

(Continued from page 244)

velous remedy which lets you grow thin while you eat! How am I doing, Trebor? I pause for applause."

"For breath, more likely," grunted Carey.

"You didn't do so badly," Trebor agreed with a grin. "But can you keep it up?"

"Of course," I replied airily. "She was taking thyroid in some form or another, and there you are!"

"Yeah, but where?" asked Carey. "Just keep right on, and explain the stone eyes to me. After all, that's really what we are interested in, in case you've forgotten."

"Oh, the eyes," I said. "Oh, yes, of course." As a matter of fact, he almost had me stumped, but only for a minute until the old logic began to work. "You see, it's like this. She raced the engine so fast that it wore out before its time. In other words, her eyes grew old too quickly, and so she got cataracts. Now if there are any other little matters that puzzle you, Carey, you had better get me to explain them while I'm in the mood."

"Well," he drawled, "as long as you feel so obliging, there is just one more little thing that sort of bothers me. This engine racing took in the whole engine, so why didn't she grow old all over?" This was accompanied by a dirty look at me and a quizzical wink at Trebor. Then just to complete my discomfiture, he added, "I suppose she *was* taking thyroid, Doctor?" And Trebor sunk both of us when he answered with deceptive mildness, "Well, as a matter of fact, no."

"Well, what was she taking?" I inquired rather hastily before Carey could turn back at me and my explanations. The expression on his face was funny. He didn't know whether to turn some sarcasm loose on me for the way my explanation had fizzled out or whether to explode at Trebor for letting us dig our own pit and then fall into it.

"Sometimes I think you ought to be a gambler," he growled at Trebor. "Seems to me you always have an ace up your sleeve. Good night! Didn't you tell us that they put thyroid in these reducing remedies? Didn't you tell us the sort of symptoms this stuff causes? And didn't you say she had them? And now you say she wasn't taking any! Sometimes I could wrap my 'jack' around your neck!" he grinned.

"Certainly, I told you all those things," Trebor grinned back at him. "Is it my fault that you fellows *will* add two and two and get six? I can't help it if you take it for granted that only thyroid can speed up the human metabolism. As a matter of fact, there are certain chemicals, or drugs, if you want to call them that, that can also produce this sort of effect. As these can be manufactured at will in any amount and often much more cheaply than thyroid preparations, it was practically inevitable that they should be added to reducing remedies instead of thyroid. One of the more recent chemicals of this class which has come into prominence as a constituent of patent reducing formulas is known technically as dinitrophenol, and it so happened that this girl had been taking a preparation which contained it.

"Some time ago it was discovered that when this chemical is absorbed into the body it has the property of increasing the temperature and also of increasing the metabolic activity. I must admit that its first use in the treatment of obesity developed from the results of certain experiments and that it was first so used by physicians. It was soon recognized, however, that it had other dangerous potentialities and possible after-effects, and ample warning was voiced that it had to be used very carefully and under very strict supervision. For example, overdosage or even what might be called a safe dosage, if persisted in too long, has been known to cause severe jaundice, severe disturbances of liver function, nephritis or kidney disturbances, certain skin diseases and also certain rather serious disturbances in *(Continued on page 282)*

The Skin in Health and Disease

Part I

By H. N. COLE

SKIN DISEASES have been known from time immemorial. Leprosy is mentioned throughout the Old and the New Testament. The Bible tells us that "Satan went forth and smote Job with sore boils from the soles of his feet unto his crown." Through the middle ages and to the present day, skin diseases have continued to plague mankind. Naturally, certain types, such as those caused by animal parasites, have decreased in frequency as the recognized causes have been eliminated. On the other hand, other types, contingent on modern civilization, have increased in prevalence.

The skin consists of an outside layer called the epidermis, a pigment layer giving varying degrees of color to the whole, and the true skin containing nerves, blood vessels, lymph vessels, oil and sweat glands, muscles and connective tissue. Underlying the true skin is a bed of fat to round off this covering layer. One occasionally sees a good illustration of the outer layer of the skin as it separates from the true skin following a light burn. The blister that is formed lifts up the epidermis. The pigment layer is more pronounced in brunettes, less so in blondes and is greatly increased in the Negro. An individual with total absence of pigment from the skin and from the eyes is known as an albino. Among the lower animals the rabbit is a good instance of the albino. The pigment is made of a substance called melanin and is, in part, nature's method of protecting the body from too much sunlight. Thus, in the tropics the white man becomes deeply tanned, and the Negro, through long ages of residence under the tropical sun, has gradually built up this protective mechanism to a high point.

We are too apt to consider the skin simply as a covering for the body and forget that it is an organ the same as the heart or the lungs or the liver. To illustrate its importance, if one third of the skin is burned the patient cannot live. An animal painted over the entire body will not survive.

Besides furnishing a covering the skin has other important functions. From an esthetic standpoint, with its underlying pads of fat and tissue it rounds off the angles and indentations of the skeleton, giving it beauty and form. The best heat regulating system in the world is

INFLAMMATIONS OF THE SKIN MAY BE ATTRIBUTED TO VARIOUS AGENTS, AMONG WHICH ARE INFERIOR COSMETICS, "PATENT" HAIR DYES OR, AS IN THIS CASE, "PATENT" HAIR TONICS.

carried out through the skin. If it is too hot outside the body the skin gives up the body's heat. If it is too cold the vessels in the skin contract, and the body conserves its heat. Winter or summer, as long as we live, this control continues without varying a degree unless disturbed because of disease.

IT IS through the skin, likewise, that the sensations of touch, pain, heat and cold are furnished to the entire body. In leprosy and in certain other diseases the sense of pain may be lost, with the result that the victim may put his hand in a fire or may cut or otherwise damage himself without realizing it until the harm is done.

Another important function of the skin is its power of excretion and of absorption. Physicians often employ the absorptive power of the skin in prescribing certain drugs which are rubbed in and absorbed through the hair follicles, or pores.

Oil from the oil glands in the true skin lubricates the entire skin surface and keeps it supple. Some races, for example the Negro race, have

an excess of oil in their skin which renders it exceedingly soft and elastic. In certain diseases the oil supply becomes deficient, resulting in cracking and scaling over the entire surface.

Perspiration is secreted from the sweat glands, which are most numerous over the palms and soles. There are two types of perspiration: sensible perspiration, which we recognize, and the insensible variety, which continues without being noticed. A good example of perspiration is seen in the football player who loses from 10 to 15 pounds during a single game. Much of this has been lost through sensible perspiration.

The skin is also an important means of protection to the entire body. One can imagine the body as being encased in a wonderful elastic covering which, in health, prevents disease germs from gaining access to deeper structures. If his skin is intact the physician handles most contagious conditions with impunity; his skin protects him. Thereafter the use of liberal amounts of soap and water will remove any danger of infection.

The skin has two appendages, the hair and nails. The nails grow out from a matrix at their base at a rate of about one-third inch each week. The nails are a necessary help in picking up objects and in protecting the ends of the fingers and toes. Without such a protection the sensitive finger tips may be irritated or injured. The nails often interpret changes in the general bodily mechanism. Frequently the physician can learn a great deal about the patient's general condition from an examination of the nails.

The distribution of hair varies in individuals and races. For example, a Chinaman who can grow a beard is the envy of his fellow men. Straight hair examined with a microscope is found, on cross-section, to be circular or oblong, while curly hair is ovoid or elliptical. The color of the hair depends on the pigment cells. Gray hair is caused by a lack of pigment cells and by air bubbles in the substance of the hair.

In some conditions the skin may be regarded as a sort of chart which indicates changes in the general bodily functions. A celebrated Berlin dermatologist once prided himself on his capacity to tell the patient's occupation from an examination of the hands. It is possible for the physician to get valuable information as to the patient's general condition from a careful examination of the skin. The stained finger tips of the inveterate smoker; the thickened skin on the knees of the scrub woman; the bulbous, bluish finger tips in certain diseases of the heart and lungs; the rather dry, weather-beaten, scaly, freckled and warty skin over the backs of the hands and face of the farmer and of the seaman; the deeply pigmented skin and mucous membranes of those rare individuals suffering from tuberculosis of the suprarenal glands or Addison's disease, and the reddish yellow, small tumors scattered over the skin in certain cases of diabetes, all indicate that the skin may act as an interpreter of the body under certain conditions and in certain diseases. The appearance of hemorrhages of pinhead size, irregularly distributed over the body and accompanied by anemia and irregular temperature often leads the heart specialist to search for a chronic infection of the valves of the heart. A single, localized, new growth on the face of an older person may indicate a cancer. The doctor finds the first symptoms of a serious disease like syphilis on the skin. While it is true that certain groups of diseases may limit themselves entirely to the skin, a great proportion of skin conditions are indications of deeper difficulties.

The commonest symptoms in connection with skin diseases are itching and burning. Sometimes the patient does not notice anything. Occasionally he may even have areas of the skin in which there is no feeling, as in leprosy; or he may complain of a sensation resembling that of ants running over the skin surface. The eruptions seen on the surface of the skin are the so-called objective symptoms of disease which the physician must analyze in making a diagnosis preparatory to their treatment. The skin may be reddened, or it may have hard elements scattered over its surface. It may be covered with eruptions filled with clear fluid or with pus. It may be weeping a clear serum or be covered with scales, crusts, cracks and blood. Often the color of an eruption is sufficient to indicate what is wrong with the patient.

There are certain skin conditions in which the tendency seems to run in families. In certain cases it may be possible to trace the same disease through four or five generations. Often the distribution or location of an eruption gives definite indication as to whether the process is due to some internal trouble or perhaps to external causes. With an eruption generally distributed, the physician is usually suspicious of a disease due to internal causation; for example, an acute infectious disease such as measles or a serious general infection like syphilis. An eruption on the hands and face or forearms may be due to the patient's occupation. Volumes have been written on skin diseases directly or indirectly caused by the patient's work. Among these conditions are the baker's dermatitis due to irritation from powdered sugar, cinnamon and flour; the eruption seen in the florist and the gardener from the Chinese primrose; a breaking out on the hands of the rubber worker, caused by dyes, and in the case of the printer by ink and turpentine; the irritation of the skin of the photographer by metol, an aniline dye used in developing.

More and more instances are being seen of eruptions on the hands of beauty parlor workers, interpreted as irritations from soapy water, cosmetics and hair dyes, many of them poisonous in character. Housewives frequently suffer from the effect of soaps, irritating washing powders, furniture polishes and floor waxes. Machinists who are in contact with oil often have troublesome boils around the hairs of parts exposed to the oil as, for example, the forearms and thighs.

Many eruptions seen on the skin are due to the effect of animal parasites such as lice and the itch mites. Others are due to infection with germs like the staphylococcus or with fungi resembling yeast, as in ringworm infections. Some are the result of serious systemic infections, as in cases of tuberculosis and syphilis. Still other skin conditions are due to serious internal disturbances from such chronic diseases as diabetes.

INFLAMMATION of the skin is spoken of as dermatitis. Many years ago a celebrated American author and physician, Oliver Wendell Holmes, wrote an essay on inflammation of the skin due to poison ivy and poison oak. Many persons are so sensitive that if they even walk near such plants the poisonous material may be blown about by the wind and thus irritate their skins. Under the term "dermatitis venenata" are incorporated all those types of skin trouble due to irritating external causes. The term is derived from the word meaning inflammation of the skin and the Latin word *venenum*, meaning poison. Eruptions occasionally occur from contact with the tomato plant, geranium, castor bean, asparagus, smartweed, four o'clock and ragweed. Workers in wood are sometimes the victims of such a dermatitis, according to their individual sensitivity. Some sensitive persons experience an eruption of the skin if they even come in contact with dogs, cats, horses and guinea-pigs. A smaller group of individuals are poisoned by dyes used in clothing and furs, by turpentine, insect powders, lacquer used in paint, furniture polishes and washing powders. Now and then one sees a dermatitis around the mouth from tooth-paste, for the paste contains orris root to which some persons are sensitive. Certain professional people, dentists in particular, have a dermatitis of the hands from prolonged use of a local anesthetic, procaine hydrochloride.

No small amount of the dermatologist's skill is needed for the care of those who foolishly use inferior cosmetics. The American people spend hundreds of millions of dollars yearly for hair dyes, hair tonics, rouges, cold creams, cleansing creams, freckle removers, "skin foods," face powders, face lotions and the like, and most of them do the skin no good. The physician smiles when told by his patient that she is using a purely vegetable dye, henna, for her hair. A true henna dye is not permanent enough to suit the patient; it washes out too readily. In many instances the so-called harmless dye is paraphenylendiamine, a dangerous aniline preparation that often causes a dermatitis on the face and even over the entire body. Some hair dyes contain lead acetate, an extremely dangerous poison. Many kinds of mascara likewise contain this dangerous dye, paraphenylendiamine. *The Journal of the American Medical Association* had an editorial on the danger of "Lash Lure," an aniline dye preparation which had rendered sightless some of its users. Most freckle removers contain a poisonous drug, mercury, in an amount sufficient to initiate a dermatitis or even a systemic poisoning. The American woman could cleanse her skin much better with soap and water than with the highly advertised cleansing creams, which do not cleanse as thoroughly and often contain mercury. This chemical is irritating to the skin, occasionally poisoning the user or causing a permanent discoloration of the skin.

APPROXIMATELY 5 PER CENT OF THE PATIENTS SUFFERING FROM SKIN TROUBLES HAVE PSORIASIS, A CHRONIC ERUPTION OF WHITISH SCALES. THERE SEEMS TO BE A FAMILIAL TENDENCY TOWARD PSORIASIS, BUT THE DISEASE IS NOT CONTAGIOUS.

Many face powders contain orris root in addition to various coloring materials. Unfortunately the skin of many persons is sensitive to orris root, and a dermatitis develops. A large proportion of toilet waters on the market contain oil of bergamot. This occasionally causes a disturbance as well as a local increase in the pigment of the skin, known as Berlocque dermatitis.

A great number of extensive cases of dermatitis are due to the use of home remedies or to the use of "patent medicines," salves and ointments. The two common home remedies are tincture of iodine and sulfur. When used properly and in the proper percentages they are valuable drugs. The layman, however, often uses them unwisely, and trouble is bound to ensue. The sulfur is practically always used too strongly. In the average medicine chest the tincture of iodine is frequently left uncovered; some of the alcohol evaporates, and the remaining material is so concentrated that it is bound not only to irritate but to blister the skin.

MANY times the patient will ask his physician, "What is in such and such a "patent" ointment?" Unfortunately, even the physician does not know, as these preparations are secret. Thus the dilemma is presented of a person blindly expecting to get results with a secret formula. The medical profession, through the American Medical Association, is constantly preaching to the public the evils resulting from the use of certain cosmetics and of "patent medicines."

The expression is often heard, "Doctor, I have eczema." What is eczema? It is an itchy inflammation of the skin, much like a dermatitis. Many of the so-called eczemas are diseases due to the occupation of the patient; again, a large group arises from the application of cosmetics. Certain conditions formerly referred to as eczemas are now known as infections; in this classification are the ringworm infections of the hands and feet. Nevertheless, in certain groups of acute and chronic inflammations of the skin the cause is not entirely local but rather internal. These inflammations are very itchy and are generally seen on the folds of the arms and back of the knees and ears, or they may even be generalized. Undoubtedly some patients have an increased sensitivity to certain foods they eat, to animal dander, to dust and to pollens which they inhale or with which they come in contact. Physicians prefer to limit the term "eczema" to those cases of dermatitis, either acute or chronic, in which the cause cannot be found. More and more cases formerly termed eczema are being removed from this group as their cause becomes known. For example, the common disease, scabies, or the itch, was at one time called eczema. Some 200 years ago a European physician discovered an animal, the size of a pinpoint, in all cases of this type. It was realized that such cases were not eczema but a definite disease with a definite cause, Acarus scabei, or the itch mite.

OTHER puzzling eruptions of the skin follow the taking of various medicines. For some reason or other, not all persons stand the same dose of a medicine alike. The fault may not be in the medicine; for it may be suited to the disease, yet immediately after its use an eruption of the skin may develop. In a large proportion of these cases the patient has been taking some "patent medicine" without the doctor's knowledge. To illustrate: under a doctor's directions the use of phenolphthalein, a drug which is used widely as a cathartic may be entirely justified. Unfortunately, some persons suffer various types of skin eruptions, including a persistent bluish discoloration of large areas of the body after long, undirected use of the drug. Many well known "patent" cathartic pills, solutions and even a chewing gum contain phenolphthalein. The results can be imagined in a fair proportion of cases.

Approximately 5 per cent of the patients suffering from skin troubles have psoriasis. This is a chronic eruption of whitish scales over the scalp, elbows, knees and sometimes other parts of the body. The patient's general health is rarely affected by this eruption, which becomes more manifest in cold weather and clears up with sunshine and heat. The cause of the disease is not known. The tendency toward psoriasis seems to run in families. It is not contagious. As a rule, the eruption responds well to local treatment by the family doctor, though a permanent cure may not be possible.

[NOTE.—Part II of this article will appear in the April issue.]

THIS GREAT ICE SKATING RINK AT DAVOS, SWITZERLAND, MEASURES OVER 7½ ACRES. SKATERS, HOCKEY PLAYERS AND "CURLERS" ARE EASILY ACCOMMODATED.

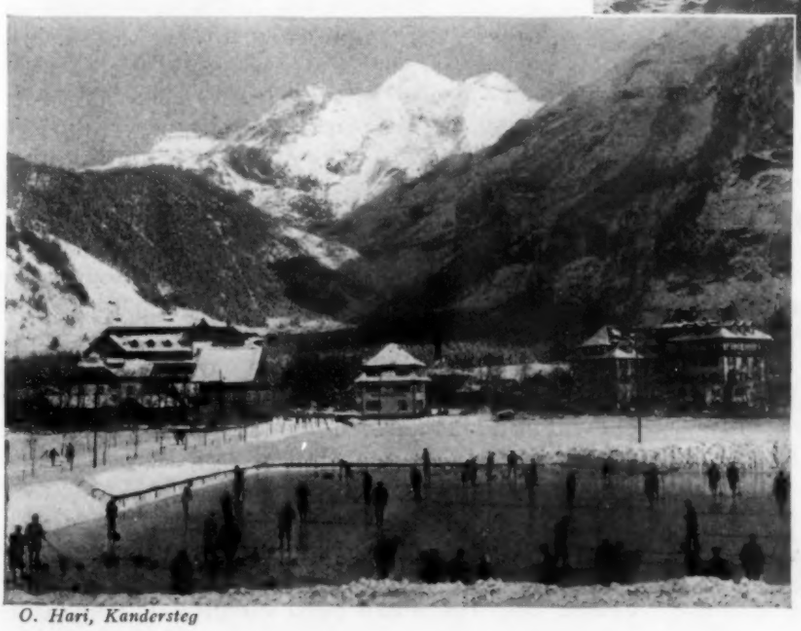
E. Meerkamper, Davos

H. Armstrong Roberts

SUCH PEACEFUL BEAUTY AS THIS MIGHT BE REASON ENOUGH TO HOPE THE CHILL WINDS OF MARCH MIGHT YET BE STAYED.

A TRIO OF SKIERS MAKE A RAPID DESCENT FROM THE HAHNENMOOS PASS IN THE LOVELY BERNESE OBERLAND.

Gendreau



O. Hari, Kandersteg

CURLING IS AN ENGROSSING PASTIME AT KANDERSTEG IN THE BERNESE OBERLAND.

THE KING IS DEAD! LONG LIVE THE KING!

Chapter XV of These Teeth of Mine

By DAVID W. McLEAN

SOONER OR later comes a chill moment which first brings the thought: Some one of these days I shall have to wear plates! Perhaps the dentist has just advised the removal of another tooth or two from the thinning ranks. Suddenly artificial teeth cease to be a vague something which some people wear, and become a real and personal threat.

Some quickly react from horror to exasperation: "I might as well have them all out and be done with it!"

Well, perhaps. Plates are wonderful things, if you need them; but full artificial dentures frequently can be avoided by restoring the mouth with bridgework and inlays instead of plates. This is to be recommended whenever it can be done without leaving diseased teeth in the mouth. There is always the chance that the fire might be hotter than the frying pan. Once having jumped, one can't get back again to the cooler place.

"You would have laughed to see these two old witches running toward the town, losing in their flight, Canidea her false teeth and Saganea her false hair." This is probably the earliest version of the perennial false teeth joke. The quotation is from Horace. The latest version appeared recently in a newspaper: A fisherman lost his false teeth in the lake; a few days later a friend restored them. He had caught the fish that had swallowed them!

The earliest authentic specimen or picture of "false sets" dates back to the eighteenth century. In 1737 there was a lady of high rank and sixty summers who had been "deprived entirely of her upper teeth." She went to the king's dentist, "a very able man in his profession." She told him she didn't ask to chew. She "simply wished to have the front of her mouth decorated and to be able to speak more perfectly." A modest request. He told her that "one might as well try to build in the air!" She was so persistent that finally he referred her to Pierre Fouchard, the father of modern dentistry.

Fouchard developed for her a metal frame which slipped on over the remaining lower teeth. There was a spring at each rear end of it, extending upward to the rear end of a narrow strip of metal, to which were attached blocks of ivory carved to represent teeth. She wore it for many years and not only smiled with it but even ate! "She could not now do without it," writes Fouchard and pictures it in his book. It was probably the great-grandfather of all modern artificial dentures.

It was a short step from this achievement to full upper and lower sets such as George Washington wore. To strips of metal fitted over the gums of each jaw, blocks of carved ivory were fastened with pins. The upper and lower sets were connected at the back by two springs, one on each side. The proud owner took the plates firmly in his hands, pressed them together as though they were biting, pushed them into his mouth—and let go. If one came on a friend sitting with jaw hanging open, it was not necessarily a sign of a vacant mind.

Since all denture bases employ the principle of snowshoes the narrow bases of those early dentures must have cut into the gums cruelly. The materials used for the teeth were ivory, human teeth with the roots cut off or blocks of hippopotamus tooth—all subject to decay and all very porous. Dr. Greenwood found it necessary to warn George Washington that he must cease soaking his dentures in port wine to purify them, as it would discolor the ivory.

A French chemist so disliked his hippopotamus set that he spent his spare time evolving teeth of baked and glazed porcelain. The entire plate and the teeth were at first baked in one piece, but porcelain shrinks so in the baking that it was difficult to make the plate fit the mouth. Finally the teeth were made as individuals with pins or grooves baked into them and then were attached to a metal base.

THE porcelain was a great improvement in appearance. The ivory and hippopotamus blocks were just rows of tombstones though Fouchard did send his product to an artist who enameled them. Today in dentures of the highest type much time is spent in perfecting the color and texture of the porcelain. The front teeth often are entirely hand carved from small blocks of porcelain. The fronts of manufactured teeth are frequently ground off, and new hand carved and stained fronts are baked on. Tobacco and other stains are reproduced in order that the teeth may look the patient's age. Much art is employed to hide art.

Artificial dentures are not built in the patient's mouth. The process is too long and complicated. Dentures are built on models reproduc-

ing the patient's gums and mounted in biting apposition on an instrument known as an articulator. The first articulators were stationary frames; then came an instrument, working like the hinge of a barn door, which has persisted through all the evolution of the past century and is still used far too frequently. While the human jaw can open as simply as a hinge, its chewing motions are vastly more complicated.

Early artificial teeth made little pretense to chewing ability. After removal of the natural teeth some of the bone which held them melts away. The gums shrink so that the lips and cheeks sink in and the distance from tip of nose to tip of chin is lessened. These early dentures did not reproduce the gum beyond the teeth. When later they began to replace some of the lost gum also, they greatly improved the patient's appearance.

Since the joint from which the jaw swings and moves lies in front of the ear opening, high up on the face, the jaw closes not only up but forward. As the jaw closes beyond its proper level, the chin pushes forward. When the jaws close too far the cheeks and lips are too large. They fold up in wrinkles. Some paintings of Washington show this condition clearly.

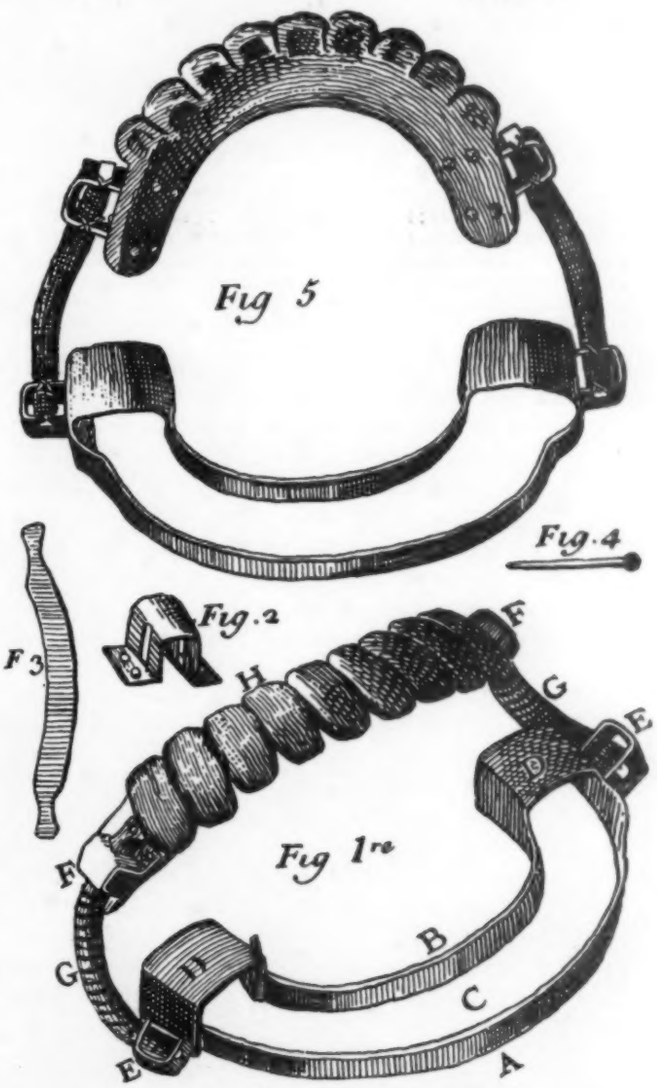
SIMILAR facial changes occur when the natural teeth are badly worn and a few back teeth are lost. The bite lets down. The jaws close too far. Many women who submit to the operation of face lifting should have had the teeth corrected instead. The facial restoration then runs no danger of looking like that of an expressionless wax doll.

Dig out of the attic some old daguerrotypes, and follow some forbear through his dental life history. The firm mouth of young manhood becomes lined with wrinkles. The lips begin to grow tight with that "stiff upper lip" appearance and to become more compressed—a thin line turned downward at the corners. The distance from nose to chin meanwhile is diminishing. Suddenly there is a marked change in the ancestor's appearance. His face is distinctly shorter, and the lips have the appearance of having been modeled crudely with putty. He is now wearing a primitive set of artificial teeth, and for photographic purposes his lips are stuffed out with cotton.

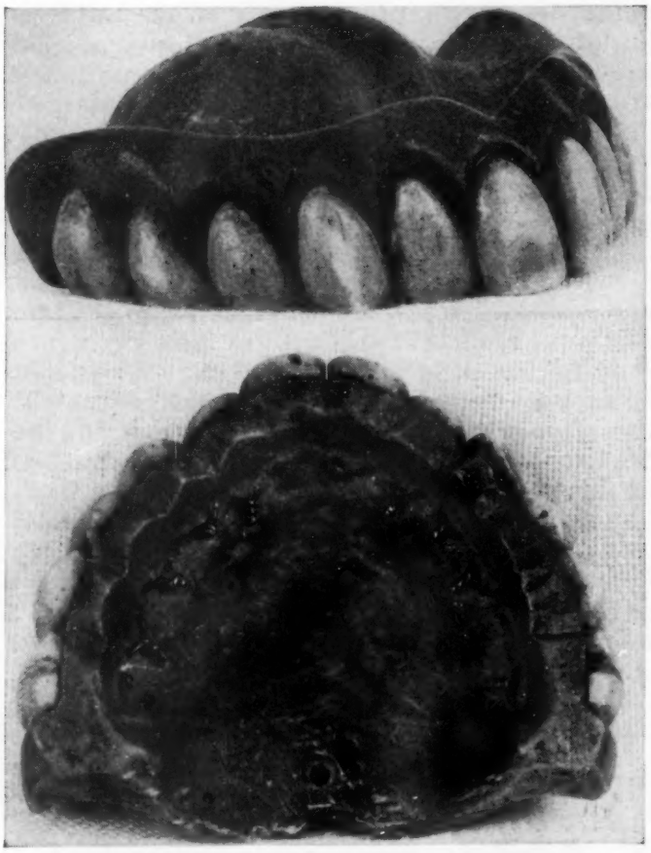
When the time comes for the patient to lose his teeth unfavorable facial changes have already occurred. Worse changes occur after the teeth are removed. The modern dentist has means at his disposal to correct such deformities.

At the time of this transition from natural teeth, gums and bone to artificial replacements the modern dentist can sometimes correct facial deformities which have existed throughout life as a result of crooked teeth and jaws uncorrected by orthodontia during childhood. Such deformities grow progressively worse until by middle age they may be a real psychologic drawback. Such patients are sometimes made very happy by the improvement in their appearance caused by the dentist's efforts at this time.

To accomplish these things the dentist must see the patient before the natural teeth are extracted. He will wish to record data regarding the color of the teeth, which changes after extraction. He will want to locate the axis on and from which jaw movements take place. He will want models of the teeth as they are before removal, so their arrangement may be copied or at least suggested. He will want to mount those models on an instrument which can be adjusted to reproduce the chewing movements of this patient's jaw, so he may study the teeth in action; the study models will have hard metal teeth, so they can chew without breaking down their cusp points. If there is much facial deformity to be corrected, he may wish to make a facial mask before removing the teeth. He



THE "HOUSE BUILT IN THE AIR"—PIERRE FOUCHARD'S INGENIOUS METHOD OF HOLDING ARTIFICIAL UPPER TEETH IN PLACE. THE METAL PIECES (A, B AND D) HOOKED OVER THE LOWER TEETH, WHICH FILLED SPACE (C). THE FLAT SPRINGS (G) DID THE REST. (REPRODUCED FROM GUERINI'S "HISTORY OF DENTISTRY," COURTESY OF AMERICAN DENTAL ASSOCIATION.)



THIS ARTIFICIAL DENTURE, WORN BY A CHINESE PRINCE, IS BELIEVED TO BE OVER THREE HUNDRED YEARS OLD. THE PLATE, CARVED FROM A BLOCK OF HARD WOOD, COVERED THE ROOF OF THE MOUTH, PROVIDING ARTIFICIAL GUMS. CARVED IVORY TEETH WERE HELD TO THE PLATE BY WIRES THREADED THROUGH HOLES. (COURTESY OF DR. ALEXANDER HURAL.)

will want photographs of the patient taken earlier in life, for his object will be to reproduce the patient as he was before retrograde facial changes began to occur. With all these data to guide his course he is ready to push off from shore, to strike out into the unknown—to remove the teeth. To remove the teeth first and then begin to think about plates would be like going to an attorney after first tearing up the documents on which he must build his case.

Springs for holding artificial dentures in place have long been taboo, despite the fact that one still sees them in the showcases of some advertising dentists. Such springs are inefficient, too uncomfortable, too unclean, too pregnant with possibilities of causing cancer. The modern upper plate covers the roof of the mouth, thus gaining suction or, as one patient called it, "sticktion," referring to the adhesion developed by two wet surfaces. Two pieces of wet glass will stick together in the same way. How the king's dentist would marvel to see the modern patient tugging to get his upper denture out. Built in the air, indeed!

All plates really rest on the gum, which in some places is thick and cushiony and in others thin and hard. Much time has been spent in devising methods of taking impressions so there will be gum compression in the same direction and amount as there will be when the patient bites on his denture. The denture must fit with the cushiony areas compressed. Otherwise one area of gum would compress under the plate, and the rest would not. The plate would tip or rock and perhaps drop.

The lower plate has less stability than the upper one. It has less surface for adhesion; tongue movements tend to dislodge it. Its weight helps some but not much.

Early dentists took impressions for plates by molding beeswax about the gums with their fingers. It was almost as bad a method as that of the modern mail order "dentists" who send the patient the tray of impression material by mail. The patient takes his own impression by the kitchen stove and sends it in to the factory. One would stand a better chance with the amazing ingenuity of those old-time dentists, despite their primitive knowledge, than with the routine of modern factory construction.

One day I called on a friend who was a skin specialist. He whispered, "I have something here I want you to see." He invited me into his consultation room and introduced me to a fine stalwart man in his fifties.

"I thought Dr. McLean would be interested in this upper plate of yours," he explained.

The patient beamed and, removing the plate from his mouth, showed it proudly.

"I've worn it twenty years," he explained. "And it only cost $8. It's never been touched by a dentist since and has never given me trouble."

After he had left, the doctor explained that the patient had recently noticed a sore at the corner of his mouth. In spite of home treatment it had spread out on his face. The doctor found that cancer had started at the edge of the old plate and had spread over the entire cheek and out onto the face. He considered the case hopeless. The ill fitting denture had long pressed too hard into the cheek muscle, causing slight but persistent irritation which had led to cancer.

Some patients have worn for many years temporary plates which were intended to be worn for only a few months while the gums were shrinking after the extraction of the natural teeth. The temporary plates continued wearable but had long since ceased to fit well. Such plates mutilate the gums and cheeks and carry a serious threat of cancer to the susceptible patient.

When a man is old enough to wear artificial teeth he has reached the age of susceptibility to cancer. Any persistent irritation, however mild, to the tongue, lips or cheeks, whether it be caused by artificial or natural teeth or anything else, should be promptly investigated and corrected.

Most of the early plates had bases of gold. The gold base is the cleanest in use today, when the porcelain teeth are attached by posts and shallow boxes and sealed to the base with cement.

In 1844, Dr. Thomas Evans, an American dentist practicing in Paris, introduced vulcanized rubber as a base for artificial teeth. In 1850, Charles Goodyear demonstrated its practical utility for dental plates, and it has been universally used since. Of late there have been many new materials.

THE material to be used depends considerably on the mouth and gums of the patient. It is not the material which governs the cost of the plate so much as the methods used in making it and the faithfulness with which the chewing surfaces of the teeth are harmonized with the individual's jaw movements.

To arrange and shape the teeth so their dozens of cusps and hundreds of facets will harmonize in every movement and position of the jaw is a difficult and time consuming task.

The movements of the jaw may seem simple, but they are really quite complex. Their reproduction by an instrument is a matter which has taxed the ingenuity of dentists, machinists, engineers and possibly poets.

The lower jaw, in chewing, closes at one side and swings to the center, sometimes across to the other side, sliding the lower teeth across the upper ones. The points or cusps of one set slide or "mesh" through between the points of the other, shearing the food fibers. That is efficient chewing; but the chewing efficiency of "ordinary" plates is only about 35 per cent of a normal healthy mouth's efficiency.

This meshing of the plates in chewing is important too because it brings freedom from clashing. The clashing of natural teeth will in time cause the bone to melt away from about their roots, loosening them. If the clashing teeth are on plates the plates may be knocked loose or may drop. Under the clashing areas the bone will in time melt away, and the gum will shrink with it. That is one reason why some people have new plates every year or so. Likewise dietary deficiency frequently causes the bone to soften.

The porcelain teeth are constructed in the factory in various colors and sizes. The shapes and sizes are built to averages as are the patterns of cusp arrangement and the slopes or facets of the cusps. Old Pierre Fouchard would have whooped with joy at sight of them. They are marvelous. But averages fit few of the persons who furnish the measurements from which they are made! So the "average" teeth must be made individual. They must be reshaped to suit the individual's arcs of chewing motion. That is no light task. Artificial dentures may cost a few dollars or a thousand, depending entirely on the amount of time and effort which go into them. The resulting excellence and efficiency will vary accordingly also.

Some people can be happy with simply made appliances, made to averages.

Once when I was taking a postgraduate course in denture construction, each member of the class was required to make an upper denture for a patient of his own procuring.

One young man brought in his aunt. She did not need or want a new denture but would submit to the process to accommodate him. First, however, she demanded assurance that her present denture would not be harmed. It was, she said, a most marvelous denture.

The professor himself asked to see her plate. She removed it easily; he looked at it and then started to replace it in her mouth.

"Can you chew nicely with it?" he asked.

"Oh, wonderfully," replied the patient.

"And does it stay up nicely?"

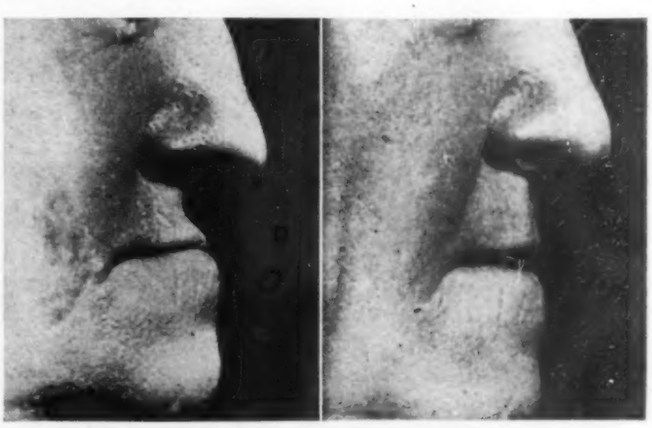
"Yes, very nicely indeed."

"You are to be congratulated," he said smiling, and pressed the denture against the roof of the mouth. When he lowered the pressing finger the plate was still perched on it. He pressed it up again, but still it would not adhere.

"Does this plate ever drop?" he asked.

"Oh no," replied the patient. "Of course I have to sort of hold it with my tongue, but it never drops. It has been a wonderfully satisfactory plate." She had never known anything better.

SOME patients could not tolerate a denture better than that one. They wander from pillar to post, collecting dentures as they go. They are patients of nervous temperament. They have difficult mouths to which to fit dentures. They require a highly individualized technic for taking impressions which will register gum compression. Their jaw movements are highly individual, and the "average" factory teeth must be entirely reshaped for them or supplanted by teeth individually cut from blocks of porcelain. All this will take time, but it will



ARTIFICIAL DENTURES ENABLE AGED PERSONS TO EAT REAL FOOD AND DIGEST IT; TO CARRY ON; TO APPEAR IN POLITE SOCIETY WITH FULL PRESERVATION OF "FACE." THEY ARE DENTISTRY'S FINAL CHALLENGE TO FORCES OF DISSOLUTION.

produce a denture which the patient will treasure.

"Doctor," remarked a new patient, "my husband wears artificial upper teeth. He has broken a front tooth and wants me to ask if you can replace it without disturbing the rest of the plate. He is very much attached to that plate."

I told her I would replace the tooth, and then I added, "How fortunate that your husband's plate turned out so satisfactorily."

"Oh," she replied, "he has over a dozen, but this one is his pet."

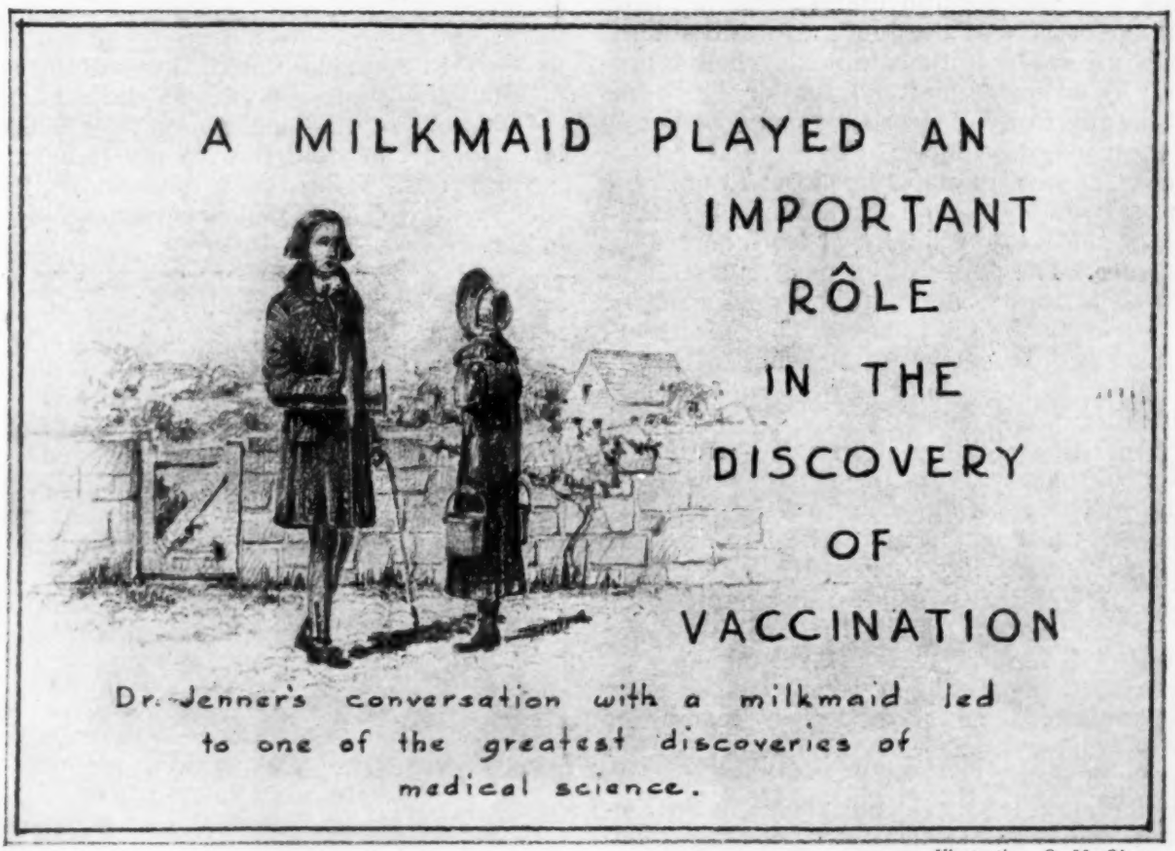
Yes, some plates do become pets. Plates are wonderful things, if you need them. They are a bit inconvenient, to be sure; less comfortable than one's own teeth; less efficient than natural teeth in good condition, and more difficult to keep clean. But still, they *are* wonderful.

Artificial dentures enable aged persons to eat real food and digest it; to carry on; to appear in polite society with full preservation of "face." They are dentistry's final challenge to the forces of dissolution. They are symbolic of a spirit that will not accept defeat; and thus they are symbolic of scientific achievements still to come, of new marvels of prevention and cure. Carry on!

[THE END]

Curious Stories About Health

The Seventh of a Series by MELVIN PRICE ISAMINGER


A MILKMAID PLAYED AN IMPORTANT RÔLE IN THE DISCOVERY OF VACCINATION
Dr. Jenner's conversation with a milkmaid led to one of the greatest discoveries of medical science.

Illustration, O. M. Olsen

THE TRANSFORMATION of a piece of folklore into a scientific method to protect humanity against smallpox is the contribution of the renowned Edward Jenner (1749-1823).

"I cannot take smallpox for I have had cowpox" were the words of a milkmaid that served as the inspiration for one of the most valuable discoveries of all time. These words rested in the mind of Jenner for some twenty years before his first vaccination was performed, May 14, 1796, on an 8 year old boy. His insight and patience were finally rewarded.

He vaccinated, gratuitously, all the poor in his home town of Berkeley, England. His own son submitted to it on three occasions, and two women of title and influence, the Countess of Berkeley and Lady Ducie, had their children protected by the new method of disease prevention. They were later proved to be immune from smallpox, and the success of the world famous discovery was established.

FAMOUS LIVES THAT ENDED BEFORE FORTY

By James A. Tobey

LIFE MAY begin at 40, as Professor Pitkin so ardently declares, but obviously life begins at that glorious age only for those who reach it. Under the present relatively advanced conditions of hygiene and sanitation, about 80 per cent of all persons born in the United States now survive to the fourth decade of life. Having attained this age, when life is alleged to go forward with so much verve and élan, the fortunate survivor may expect to enjoy another thirty years or so of bountiful existence.

The expectation of life at the age of 40 has not changed appreciably since the middle of the nineteenth century, but in past centuries the person who reached even 40 could be credited with a remarkable achievement. In 1800, for example, the average length of life at birth was only about 35 years. Individuals survived, of course, to old age, but the high mortalities in infancy, childhood and early adult life brought the average life span below 40 years, so that fewer persons lived beyond that age than is now customary.

In the old days those who did reach 40 usually had as favorable chances for subsequent long lives as those of us in modern times who escape the hazards that plagued our great-grandparents in early life. Smallpox, typhoid, cholera, yellow fever, tuberculosis, typhus, infantile diarrhea and other pestilential diseases that took a severe toll among our ancestors have yielded to modern preventive measures. Today we are more liable to succumb in later adult life to cancer, Bright's disease, heart troubles and other organic maladies.

Many famous persons have died before the age of 40, frequently as the consequence of diseases now recognized as unnecessary and preventable. These untimely deaths have often altered the course of history. If, for instance, Prince Arthur, eldest son of Henry VII of England, had not succumbed to tuberculosis at the age of 16, Henry VIII might never have come to the throne. If Henry's son, Edward VI, had not died at the same age of the same disease, Elizabeth might never have been queen of England, and the future destinies of that nation undoubtedly would have been different. If Henry VIII had not been afflicted with the syphilis which not only caused his ultimate demise but contributed to the failure of his first wife, Catherine of Aragon, to bear male issue, Edward VI and Elizabeth probably would never have been born. Thus do diseases and the deaths they cause influence mundane affairs. History is replete with similar "ifs."

The most noteworthy of the untimely deaths of antiquity was that of Alexander the Great whose decease occurred in 323 B. C., at the early age of 33. Immediately after the assassination of his father, Philip of Macedon, in 336, Alexander set out to conquer the world as it was known at the time, and in a little more than a decade he had accomplished that brilliant feat. Greece, Persia, Syria, Egypt, Babylon, Phoenicia and India were subjugated in turn by this valiant conqueror who could not, however, conquer disease. Following a carouse in 323, Alexander fell ill of a fever, in all probability malaria, and in twelve days was dead. The empire that he had erected fell with him and was divided among his generals.

MALARIA, a disastrous malady in early times, is said likewise to have been the cause of the death of Alaric, the great Visigoth chieftain who pillaged Rome in the fifth century, A.D. Although the exact date of his birth is not known, Alaric was undoubtedly less than 40 years of age when he expired in 410. Repeated attacks of malaria were responsible also for the death in 1285 of Philip the Bold, king of France, who was then in his fortieth year. Philip's grandfather, Louis VIII, died of dysentery in 1226 at the age of 39, while leading an expedition against the heretical Albigenses in the south of France.

Many of the kings of France ended their days prior to the fortieth year of life, usually of diseases brought on or promoted by their own follies and excesses, and accentuated by a consistently poor heredity. Louis X was only 27 at the time of his demise from pneumonia in 1316, and Charles VIII was about the same age when he died in 1498 from concussion of the brain after a fall, an accident which probably saved the king from death of tuberculosis within a few years.

This malady, known in its pulmonary form as consumption, was fatal to Philip V in 1322 at the age of 28 and also to two sons of Henry II and the notorious Catherine de Medici. The eldest son, Francis II, who at 15 was married to Mary Stuart, queen of Scots, died a year later in 1560; the second son, Charles IX, died of consumption in 1574 at the untimely age of 24. A son of

IN PAST CENTURIES PERSONS WHO REACHED THE AGE OF 40 COULD BE CREDITED WITH A TRULY NOTABLE ACHIEVEMENT.

Francis I, also named Francis, succumbed to tuberculosis at 18, and his sister, Madeleine, wife of James V of Scotland, died of this disease in her seventeenth year. James V was only 30 at the time of his death in 1542, a few days after the birth of his daughter Mary, by his second wife, Mary of Lorraine.

Louis XIII, who succeeded to the throne of France when his father, Henry the Great, was assassinated in 1610, was only 42 when he died of a tuberculous disease. His son, Louis XIV, the "Grand Monarque," was one of the few French kings to live a long and fruitful life, so long that when he died in 1715 at the age of 77, he was succeeded by his great-grandson, Louis XV. The eldest son of Louis the Great died in 1711 of smallpox, and his grandson succumbed in 1712 either to this disease or to a severe case of measles. A son and a grandson of Louis XV died in early life of tuberculosis, and two sons of Louis XVI, who was guillotined in 1793 at the age of 39, were stricken with the same ailment, which was literally the nemesis of the Bourbons. During the 250 year reign of this house in France, nine immediate members of the ruling family lost their lives from tuberculosis. This record, bad as it was, had been surpassed by the Valois who preceded the Bourbons on the French throne, for at least a dozen of the Valois were similarly afflicted.

In 1832 there occurred the death of a young man of 21 who had been destined to be emperor of France but who had been prevented by fate and the ravages of a rod-shaped bacillus from ever enjoying this privilege. This unfortunate young man was the duke of Reichstadt, known as *L'Aiglon*, the only legitimate son of Napoleon I. His death from tuberculosis made his cousin, Louis Napoleon, head of the Bonaparte family and aided in his eventual accession as emperor. The son of Napoleon III was killed by the Zulus while serving with the British in South Africa in 1879 when he was 23 years of age. Carlo Bonaparte, father of Napoleon I, died in 1785 at the age of 39 of cancer, a disease which also caused the death of Napoleon.

Another famous victim of the white plague was Alphonso XII, first of the kings of all Spain, who was only 28 when consumption caused his death in 1885. Some months after this, his widow gave birth to a son, Alphonso XIII, who was born a king but ceased to be one when he abdicated a few years ago. A remote ancestor of these kings, Alphonso XI, died of plague in 1350 at the age of 38.

Queens and princesses in the middle ages and in modern times often have been no more fortunate than kings in being able to enjoy long and productive lives. An ancient enemy of women, childbed or puerperal fever, has caused the deaths of many famous queens in early life. In 1410, for example, the fair Isabella of Valois, second wife of Richard II of England, lost her life from this cause when she was only 23 years of age. The same tragedy came to the 37 year old Elizabeth of York, wife of Henry VII, in 1503; and it was responsible for the passing of two of the wives of Henry VIII. Jane Seymour, Henry's second wife, died twelve days after giving birth to Edward VI in 1537. She was then 36, the same age at which Catherine Parr, Henry's sixth and last wife, died in childbirth in 1548. Catherine was then married to her fourth spouse, Sir Thomas Seymour, Henry VIII

having died of the effects of syphilis a year or so earlier. In 1746 Marie Therese, wife of the dauphin Louis of France, died of puerperal fever at the age of 20.

The death of a royal princess in childbirth shortly after the beginning of the nineteenth century was to have an important influence on the future history of England. George IV, ruler of that nation, had married Caroline of Brunswick, by whom he had only one child, Charlotte, born in 1796. In 1816 the princess was wedded to Leopold of Saxe-Coburg, afterward king of the Belgians. Her death in childbirth in 1817 removed the last legitimate offspring of the thirteen sons and daughters of George III.

In order to remedy this situation, three of the bachelor brothers of George III contracted marriages in 1818. To one of these unions, that of the Duke of Kent with Victoria Louisa, sister of Leopold, a daughter, Victoria, was born in 1819. Victoria became queen of England in 1837 on the death of her uncle, William IV, and reigned until her death in 1901. She lost her husband, Prince Albert, from typhoid in 1861 when he was 42 years old.

In 1878 another tragedy came to the family of Queen Victoria, for in that year her daughter, Princess Alice, died of diphtheria at the age of 36. The princess had gone to the sickroom of her child, ill of diphtheria, and had kissed the pale lips. Both mother and daughter succumbed to this malady, which is so easily preventable and curable today. In 1871 Victoria nearly lost her eldest son, the future Edward VII, from typhoid, a disease with which the late George V was afflicted in his early manhood.

A preventable disease was responsible for the demise of another queen of England, Mary II, joint ruler with William III. In 1694 a great epidemic of smallpox descended on London, taking in its toll the 32 year old queen. William also caught the disease but recovered. His father, William, prince of Orange, had died of smallpox in 1650 at the age of 24, the son being born posthumously. Smallpox was likewise the cause of death of Peter II of Russia on his wedding day in 1730, when the czar was only 15 years of age.

Another famous sufferer from smallpox was George Washington, who contracted it during a trip to the Barbadoes in 1751 when he was 19. George went to this languorous isle with his older half-brother, Lawrence, who was troubled with a pulmonary disorder. Lawrence returned to Virginia in 1752 and died there of consumption in his thirty-fourth year. Three children of Lawrence and his wife, Anne Fairfax, died in infancy and one in early childhood. George Washington, who lived to be nearly 68, had no children. His wife, Martha, had four children by her first marriage to Daniel Parke Custis. Two were lost in infancy and one at the age of 16, and the fourth succumbed in early adult life to dysentery, or "camp fever."

Of the four children of another great American president, Abraham Lincoln, only one survived to man's estate. When Robert Todd Lincoln expired in 1926 at the age of 83, few persons knew that he had had three brothers who died young. In 1850 Edward Lincoln, second son of the future president, was afflicted with diphtheria, which caused the death of the 4 year old boy. In 1862 the third son, William, died of bronchopneumonia at the age of 12, and in 1871, six years after the assassination of the President, Tad Lincoln, then in his eighteenth year, succumbed to pleurisy, probably of tubercular origin. The only son of Robert Todd Lincoln, Abraham Lincoln II, was 16 when he died of pleurisy in London in 1890.

Many years before the occurrence of these fatalities, tragedy had come to Abraham Lincoln with the death of his fiancée, Ann Rutledge, who fell ill of a fever in 1835, in all probability typhoid, and died at the age of 19.

A few years previously, in 1828, typhoid had caused the death of the famous composer Franz Schubert, then only 31 years of age. In 1791 the same disease apparently was responsible for the demise of another celebrated composer, Wolfgang Amadeus Mozart. There is some question as to the exact cause of his death, but there is no doubt that he was only 35 years old at the time.

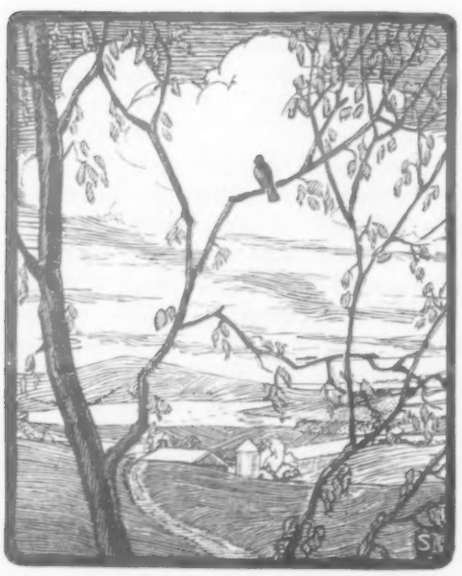
A number of other illustrious musicians have perished before the age of 40. Mendelssohn was only 38 when he passed away in 1786; Chopin was 39 when tuberculosis caused his death in

1849, and Weber was about 40 when he died from the same disease in 1826.

Many famous authors have likewise had relatively short careers. John Keats and Percy Bysshe Shelley both suffered from tuberculosis, and in 1821 at the age of 25, Keats succumbed to it. Shelley was drowned in 1822 at the age of 30. Robert Burns was 37 when he expired in 1796, and Edgar Allan Poe had reached only 40 at the time of his death from pneumonia in 1849.

Facts like these could be multiplied almost indefinitely to show that life has often ended before rather than begun at 40. Benjamin Franklin, for instance, lost a 4 year old son from smallpox, and Louis Pasteur, the great French chemist who laid the foundation for modern preventive medicine, lost two young daughters from typhoid, a disease which sent to his grave a young son of the second Cornelius Vanderbilt. The death of his own child from diphtheria inspired Nathan Straus, the philanthropist, to establish his famous milk stations in New York City in 1892. A similar calamity led Dr. H. L. Coit to originate certified milk in 1894.

The conditions responsible in the past for these many deaths before 40 no longer exist. Times have changed, and with the change have come notable advancements in hygiene and sanitation which offer to all persons greater chances for longer and more comfortable lives. The new science of nutrition has revealed ways and means by which healthful longevity can be promoted through diets of protective foods such as pure milk, fruits, green vegetables and eggs. Death, of course, can never be prevented, but it can often be postponed. Diseases can be averted, and many are prevented by practical hygienic measures which hold out to all of us prospects of longer and better lives, beginning even in the fortieth year and continuing for many years thereafter.



Spring rides no horses down the hill,
But comes on foot, a goose-girl still.
And all the loveliest things there be
Come simply so, it seems to me.

—EDNA ST. VINCENT MILLAY

And so, quite simply, spring brought new interests and new zest into the life of Mrs. Oliver, who, at 50, finding herself relieved of her usual cares, discovered also that she was too tired to enjoy her long anticipated leisure. "But," said Dr. Hilton, "your fatigue is not physical. When you find something to do that you enjoy so much you think it *needs* you, you will forget to be tired." What Mrs. Oliver found forms the basis for *Berenice Lowe's* delightful story, "Nothing to Do."

In the spring a young man's fancy may "lightly turn to thoughts of love," but just as surely do the fancies of others turn to thoughts of the open road, the fishing rod, the swimming pool—vacation! "For some unknown reason," writes *Dr. George A. Skinner,* "many men will undertake physical strains at this season of the year that they would never think of at any other time. Strenuous hiking, long canoe trips, carrying heavy loads in portage, wading streams all day in fishing, all requiring the utmost in physical exertion, are indulged in without previous physical preparation, often with disastrous results." If through overindulgence or procrastination the middle aged man has allowed himself to become overweight and feels the lack of "staying power" for any physical exertion, is it possible for him to "stage a comeback?" Dr. Skinner, who has dealt with large numbers of men in training camps during both war and peace, gives the answer in his paper on rational physical regeneration.

Spring brings thoughts of camp to boys and girls—and also to their parents. How should one go about choosing a camp? What are the essentials for which to look? What are the important factors to be taken into consideration in order that the child may derive the utmost benefit and enjoyment from the season? The wise parent will carefully consider the points presented by *Dr. Mendel Zeligs* in "Are You Sending Your Child to Camp?"

What is the most interesting subject in the world? For each man the answer is "Myself." Is this a sign of an unhealthy and intolerable conceit? No, indeed, for according to *Dr. R. R. Spencer,* "Egoism is natural, normal and essential. Without it our personalities could not develop along socially efficient channels. One must studiously cultivate one's self and in this sense be an egoist before one can become an altruist." The study of the development of one's whole self, to the end that one may achieve a healthy personality, is therefore not only the most interesting but surely the most important subject.

Also in the April issue will be: "Store Teeth" by *Robert H. Brotman, D.D.S.; Dr. Samuel J. Kopetzky's* exposé, "Exploiting the Deaf"; "What Parents Should Know About Tuberculosis," a clear, concise summary by *Dr. Allen S. Johnson,* and *Harriet Morgan's* discussion of "Dietary Delusions, Past and Present."

New Books on Health

PSYCHOLOGY OF SEX

By Havelock Ellis. Price, $3. Pp. 377. New York: Emerson Books, Inc., 1935.

A LIFETIME of profound and scholarly study in the psychology of sex, begun at a time when mid-Victorian prudery exposed him to numerous difficulties and compelled the publication of some of his earlier works outside his native England, has placed the name of Havelock Ellis in an enviable position in his field. Embracing a broad and liberal point of view toward the psychology of sex, without at the same time alining himself with the radicals who would tear down all restraint, he has developed a body of knowledge and based thereon a philosophy of sex and its psychology, knowledge of which is indispensable to every well-trained physician. He gives due credit to Freud for his observations and his contributions to the problem of sex and its adjustment to the demands of a complex society in which primitive urges must be subordinated to the welfare of the social organism, but he does not subscribe without reservation to the tenets of psychoanalysis.

He defends monogamy, not alone on the ground of social morality but on the ground that individual welfare and the interests of children demand it. He emphasizes that there is no sharp dividing line between the normal and the pathologic in sex. His liberal sympathy for the homosexual should bring comfort to this group which has so often been unjustly branded as criminal. His attitude toward sexual practices which deviate from the usual is tolerant; he deplores the term "perversion," preferring "deviation." This book offers little new to readers who are familiar with his more detailed "Studies in the Psychology of Sex," but it does present a simpler, more condensed and relatively nontechnical summary of his views and their relationship to those of other workers in the field. It is a book which physicians should find interesting and useful. It should also be of use to psychologists and their students and indeed to any cultured reader who wishes to have a better understanding of sex. A glossary of terms enhances the usefulness of the book to the nontechnical reader. There is a good index. Entirely aside from its scientific and philosophic values the book is a fine piece of literary craftsmanship which should be a welcome addition to any library.

W. W. BAUER, M.D.

NUTRITION WORK WITH CHILDREN

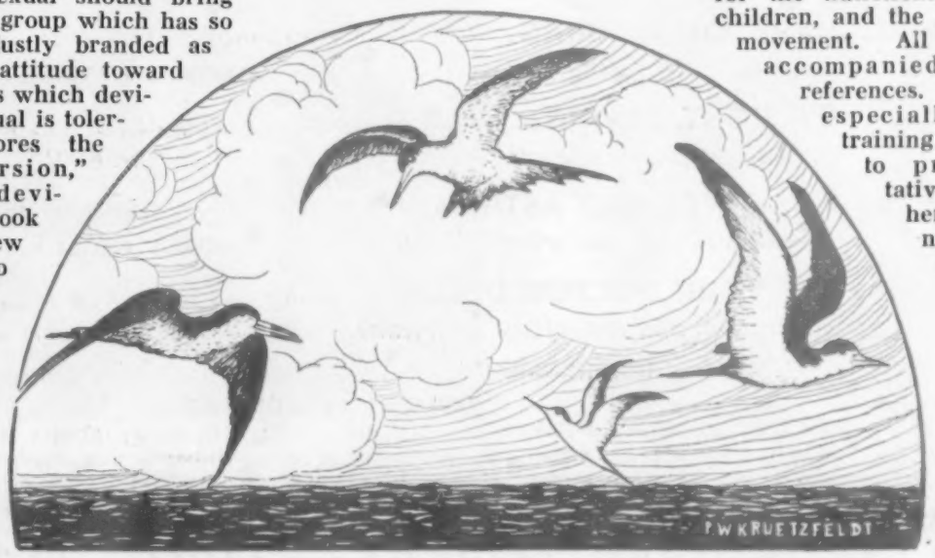
By Lydia J. Roberts, Ph.D., professor and chairman of the department of home economics, the University of Chicago. Revised and enlarged edition. Cloth. Price, $4. Pp. 639, with illustrations. Chicago: The University of Chicago Press, 1935.

THIS THOROUGHLY revised and enlarged edition of the first issue of the book brings the subject matter up to date. It is an advanced text with reference work on the problem of malnutrition as it affects childhood, and practical methods for the recognition and eradication of the condition. The book is especially adapted to meet the needs of teachers, social workers, nurses, physicians and specialists engaged in health and child welfare work. The subject matter is presented as far as is possible in nontechnical language.

Methods of ascertaining the nutrition level of the child are critically examined. The height-weight method, once so widely accepted, is discounted. All recent developments in child welfare study are thoroughly treated. A broad conception of nutrition in keeping with modern views of optimal nutrition is upheld and practically applied.

The need for nutrition work with children of all socio-economic levels from infancy up through high school ages is stressed. The true meaning of nutrition and malnutrition and the effects of faulty nutrition are thoroughly discussed. The effects of the recent depression on nutrition and health and of optimal versus adequate nutrition are two new subjects receiving attention. Chapters are devoted to causes of malnutrition, physical effects of undernutrition, and prevention and treatment of malnutrition.

The development of a practical program for the improvement of the health of children is treated in the later chapters of the book: the nutrition-health program in the school; nutrition teaching at the various grade levels; the responsibility of different workers for the nutrition-health program; special problems in the school; health materials; nutrition work with preschool children; agencies working for the nutritional betterment of children, and the parent-education movement. All chapters are accompanied by classified references. The author is especially qualified by training and experience to present authoritatively this comprehensive survey of nutrition work with children. Knowledge perhaps otherwise inaccessible is thus made available in a readily understandable form. Observations and interpre-



tations of problems dealing with the nutrition of the child are given, which enable the building of a finished judgment on child health subjects. The author has accomplished a colossal, painstaking task and has paved the way for future progress. The book is a classic in its field. Many students and health workers will be grateful for this scientific achievement of the writer, and many children will consequently have better health.

RAYMOND HERTWIG

HEALTHFUL LIVING

By Harold S. Diehl, M.D. Price, $2.50. Pp. 354. New York: McGraw-Hill Book Company, Inc., 1935.

THE BEST health books have something just a little beyond the mere factual content of their chapters. Dr. Diehl has written such a book. His long experience with the health service for students at the University of Minnesota qualifies him to speak with authority about healthy living. As the introduction by Dr. Morris Fishbein points out, his work has been checked and rechecked until its authenticity is as much beyond question as is humanly possible. The book has a pleasantly easy and informal style which makes it decidedly readable. The selection of material is such that the reader gets all the information he really needs in order to live intelligently for better health, without a great and conglomerate mass of facts which may be authentic enough but serve no purpose except to confuse. The author's excellent judgment and sane common sense are best exemplified in the handling of such subjects as diet, reducing, alcohol, tobacco, self diagnosis and treatment, and sex; all these are topics which quickly betray the faddist or the inexperienced writer into the exhibition of his incompetence. Dr. Diehl's book deserves wide endorsement by physicians who are asked to recommend books on health and hygiene to their patients. Health teachers likewise should welcome it. This volume sets a high standard for the Whittlesey House health series of which it is the first. In addition to its intrinsic merit it is well made and attractively printed. It has an excellent index, and a fine bibliography further adds to its value.

W. W. B.

WHAT YOU SHOULD KNOW ABOUT SOCIAL HYGIENE

By M. J. Exner, M.D. Pp. 72. Cleveland: Brotherhood of Locomotive Firemen and Enginemen.

WITHIN THE limits of its size, this is a serviceable booklet, setting forth in a simple and straightforward manner the facts with relation to syphilis and gonorrhea. The fact that it is sponsored and published by an organization of men not primarily concerned, as an organization, with health is interesting evidence of the realization that health interests are universal and have an important bearing on employment, employability and efficiency. In railroading especially, where syphilis or even gonorrhea may, through remote after-effects, incapacitate a man for the pursuit of his calling, the prevention of these plagues is of special importance. The reluctance of many publications, all radio broadcasting networks and most individual radio stations to permit discussion of the venereal diseases lends exceptional importance to any well prepared piece of educational work which is likely to have wide circulation. Since individuals prefer material from sources in which they are interested, perhaps railroad men and other union men will find this booklet more acceptable than one of equal merit from another source. Credit is due to those who conceived this series of articles, here reprinted from the monthly magazine of the brotherhood, for recognizing the No. 1 Public Enemies in the field of health and adding their ammunition to the attack on them which now seems to be gathering momentum after lagging for many years.

W. W. B.

Radio Program of the American Medical Association

in cooperation with the NATIONAL BROADCASTING COMPANY

Each Tuesday at 5:00 p.m., E.S.T.—4:00 p.m., C.S.T.—3:00 p.m., M.S.T.—2:00 p.m., P.S.T.

Schedule for March 1936

March 3. CANCER: *Early recognition offers hope of cure in many cases.* **W. W. BAUER, M.D.**

March 10. HARD OF HEARING: *Causes, prevention, adjustment to hearing loss, and hearing devices.* **MORRIS FISHBEIN, M.D.**

March 17. EYESIGHT SAVING: *How accidents, disease, abuse and poor hygiene can injure the eye.* **W. W. BAUER, M.D.**

March 24. HAY FEVER AND ASTHMA: *How innocent foods and harmless substances can cause severe illness.* **MORRIS FISHBEIN, M.D.**

March 31. LET YOUR DOCTOR DECIDE: *Fallacies in self diagnosis, self medication, and the advice of friends.* **W. W. BAUER, M.D.**

RED NETWORK N.B.C.
WEAF, WEEI, WTIC, WJAR, WTAG, WCSH, KYW, WFBR, WRC, WGY, WBEN, WCAE, WTAM, WWJ, WMAQ, KSD, WHO, WOW, WDAF.

PACIFIC NETWORK N.B.C.
KGO, KPO, KFI, KGW, KOMO, KHQ, KFSD, KTAR.

as well as other N.B.C. stations.

Ladies and Gentlemen: Your Health!

"The Story of Louis Pasteur"

Scenes from the production by Warner Brothers.

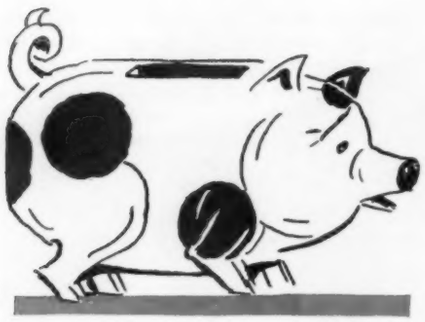
"SO YOU WANT TO RENDER A REAL SERVICE TO YOUR COUNTRY, IS THAT IT?" PASTEUR (PAUL MUNI), FIGHTING ALMOST ALONE, FINDS IN YOUNG DR. JEAN MARTEL AN EAGER AND HARD-WORKING DISCIPLE.

"TRY AGAIN, AGAIN AND AGAIN! REMEMBER OUR AIM. FIND THE MICROBE, AND KILL THE MICROBE!" PASTEUR WAS UNDAUNTED.

SHOULD HE GIVE LITTLE JOSEPH MEISTER THE NEWLY DISCOVERED HYDROPHOBIA VACCINE? WOULD IT FAIL OR SUCCEED?

"YOU WERE RIGHT. SHE DID DIE, AND CHARBONNET HAS NEVER FORGIVEN YOU." WITH SYMPATHETIC UNDERSTANDING MADAME PASTEUR (JOSEPHINE HUTCHINSON) SHARES THE BURDENS WHICH THE IGNORANCE AND BIGOTRY OF THE TIMES THRUST ON THE GREAT PASTEUR.

"LIVE IN THE SERENE PEACE OF LIBRARIES AND LABORATORIES. SAY TO YOURSELVES FIRST: 'WHAT HAVE I DONE FOR MY INSTRUCTION?' AND AS YOU GRADUALLY ADVANCE: 'WHAT AM I ACCOMPLISHING?' UNTIL THE TIME COMES WHEN YOU MAY HAVE THE IMMENSE JOY OF THINKING THAT YOU HAVE CONTRIBUTED . . . TO THE WELFARE AND PROGRESS OF MANKIND."



The Pig That

BILLY BARTLETT shook the pink china pig that he used as a bank. It rattled pleasantly with the jingling of many dimes, nickels and pennies. But Billy looked serious. He would have liked it better if there had been the solid crash of more silver half dollars.

He spilled the contents out onto the table and made neat little piles. "Twenty dimes. That's two dollars. Six quarters. That's a dollar and a half. Forty nickels. That's two dollars." Then he drew a long breath and tackled the pennies. "Two hundred and twenty-seven. Gee, I did hope there'd be two hundred and fifty. Let's see. Two, and one and a half, and two, and two more and twenty-seven cents."

He added the amounts on the back of an old envelop which he had been using for more than two months. "Seven dollars and seventy-seven cents, and here it is Thursday noon, and the fellows start on Saturday morning. I've just got to have nine dollars if I'm going to camp for a week. Dad can't help me this year on account of Bobby's going away to school in the fall. I don't want to ask Grandma because some one is always asking her to help out. No siree, Billy. You've got to find a way to get that dollar and twenty-three cents all by yourself."

He put the coins back into the china pig, one by one, meantime thinking fast. The only place he was sure that they needed a boy was down at the market garden. The sun was hot and the weeds were many, but he got out his bicycle and rode down. If a boy weeded fast and steadily he could earn about thirty cents in the afternoon, and Billy tended strictly to his carrots.

THE SUN WAS HOT AND THE WEEDS WERE MANY, BUT HE GOT OUT HIS BICYCLE AND RODE DOWN. IF A BOY WEEDED FAST AND STEADILY HE COULD EARN ABOUT THIRTY CENTS IN AN AFTERNOON, AND SO BILLY TENDED VERY STRICTLY TO HIS CARROTS.

Ate Pennies

By ELSIE G. HIGGINS

At 5 o'clock he collected his thirty cents and started home. He was tired and so dirty that his grin was a little one-sided. It seemed a long way home, and as he pedaled up the driveway he gave a sigh of relief. He threw himself down under the apple tree and stretched himself to get the kinks out of his back. "Seven dollars and seventy-seven cents and thirty cents are eight dollars and seven cents," he thought sleepily, "and that leaves ninety-three cents to earn."

He was pleasantly drowsy, and it was cool and shady under the apple tree. He decided, lazily, that he wouldn't clean up for supper. His mother had a notion that a fellow ought to scrub up before every meal, not just wash but do a thorough job of cleaning. All the dirt had to come out from under the finger nails too. If he waited until supper she might let him get by, especially when she knew what he had been doing. Now that ninety-three cents. He wondered how he would ever earn it.

He looked at his hands. He seemed to have brought back all the dirt from the market garden. Pretty bad looking fists. He groaned and stretched again, then sat up. He supposed there was something to what his mother said about more than simply dirt lodging under those nails. Germs and disease and so on. Might as well clean up and be done with it. He wondered whether Mrs. Smithers wanted any one to mow her lawn. But that would be only fifty cents.

He had just finished his nails and given his face a last polish when his mother called him down to supper.

"Company coming, Son. Your Uncle Ed and Aunt Alice will be here any minute now, and they're bringing little Ned. There's the car this minute."

Billy ran out into the yard to help with suit cases and make friends with the little cousin. There was a happy hullabaloo of greetings and gay talk. The supper with crisp green salad and cottage cheese and spicy gingerbread went to the accompaniment of laughter and jokes.

Billy felt his Aunt Alice eyeing him critically and approvingly and was glad of that bout with the wash cloth and the nail file, but he didn't know the real reason for her survey until Uncle Ed took him aside later in the evening.

"Say, Billy, would you mind looking out for little Ned tomorrow? Your Aunt Alice and I are going to Westfield for the day, and it's rather a long trip for Ned."

"Sure, I'd like it, Uncle Ed."

"All right, then. I don't mind telling you Aunt Alice is a crank on cleanliness, but one look at you and she knew you weren't spreading any germs. We'll bring you something from Westfield—or say—how about giving you a dollar and letting you get what you want?"

Billy fairly stuttered in his hurry to accept. "I'd like the dollar, Uncle Ed. I need it badly, at least ninety-three cents of it." But Uncle Ed went just then, so he didn't have to explain.

It was almost too good to be true. Not only did cleaning up make a fellow look better and feel better, but it actually paid—cash at that. Billy turned to wink at the pink china pig and, believe it or not, it winked back. It knew who fed it!

THE PARTY

Joanne had the prettiest dress on,
With rosebuds, ruffles and lace;
Priscilla won most of the prizes,
But Anne had the cleanest face!

By Beatrice Creighton

QUESTIONS AND ANSWERS

Menstruation

To the Editor:—What is the view taken by physicians on the question of physical exercise during the menstrual period? It has been brought out that since the process of menstruation is a normal function of women a normal individual should lead a normal life during these days. Is it true that if athletic games are too strenuous during this period for an individual she is not physically fit to participate at any time, since the strain is said to be only more apparent during this period? I am told that the presence of "cramps," overfatigue, backache, nausea, general depression, nervousness or any like complaint that causes a woman to be handicapped during a portion or the entire period is a sign of a condition needing immediate medical attention.

M. V. D., Pennsylvania.

Answer.—Until the age of 12 the boy and girl may be reared in much the same manner. Their problems are approximately the same. Thereafter, however, the problems of the girl are distinctive. In this period of her life her organs begin to differentiate so as to prepare her for her function as a mother. This change includes the development of the menstrual flow. Until menstruation appears a girl is not likely to bear children. With the coming of menstruation the organs develop, and the possibility exists. The onset of the menstrual flow is not always an abrupt and complete development. It may at first be irregular and later regular.

Views about menstruation have changed in the last quarter century. Nowadays girls are likely to go through this period without the slightest alteration in their habits. There are instances in which the function is accompanied with severe pain and physical disturbance. When these occur they should have the attention of a physician.

Some observers have also claimed that the assuming of the upright position of the human animal is in a way responsible for some of these menstrual disturbances. Thus, today, posture can be blamed in part at least for menstrual disturbances.

Certain individuals during their menstrual periods can safely indulge in athletic games; other individuals can do no more than the required amount of physical exercise to go on about their daily routine, whereas still other individuals must strictly limit their activity. This is a question to be decided individually.

Most of the symptoms, such as backache, nausea and nervousness, require medical attention if they are severe and continuous. There is occasionally present in these cases some mental factor which also needs attention. Certain individuals can stand pain a great deal better than others who suffer more with even the slightest discomfort.

If, after careful examination, a girl is pronounced physically normal by a physician, then further medical attention does not seem indicated even though there is discomfort during the menstrual period.

Diabetes Mellitus

To the Editor:—Is diabetes mellitus considered to be under control when the urine is sugar-free? When the urine shows a trace of sugar I take about five or eight units of insulin before the next meal. Sometimes this small dose causes weakness in my limbs, and excessive perspiration, even after a meal which contains at least 60 grams of carbohydrate. What harm may come to me, if I keep close to my diet? Is tobacco smoking any more harmful to a diabetic than to a normal person?

R. H. S., Kentucky.

Answer.—The mere fact that the urine is free from sugar does not mean that the diabetes is under control. The blood sugar is the criterion to be considered.

The experience described is not an uncommon one. This has happened fairly frequently to patients using insulin. Physicians warn such patients that they must continue under the observation and supervision of their physician until such a time as they are ordered to discontinue by the physician himself. Other factors, not connected with diet, may produce the symptoms described since the appetite at times demands a greater amount of sugar than at other times. Periods of emotion and stress may be an example.

Whether smoking is more harmful to a diabetic person than to others should be answered by the physician who has seen and examined the patient. This should be the procedure in all cases, since this question cannot be answered in the same way for every person nor in the same way for the same person at all times.

Stomach Ailments in Men Servicing Refrigerators

To the Editor:—Have any serious stomach ailments resulted from servicing either gas or electric refrigerators?

M. M. H., Pennsylvania.

Answer.—A physician employed by a company which services refrigerators sends the following information: "We have had no serious stomach ailments in our men who service electric refrigerators. We have had some acute disturbances such as nausea and vomiting, and one case of slight hemorrhage from the mouth nine days after inhaling chlorine gas. This case cleared up very quickly and the patient has been well since. With these exceptions, our answer is negative."

(Continued on page 285)

If you have a question relating to health, write to "Questions and Answers," HYGEIA, enclosing a three-cent stamp. Questions are submitted to recognized authorities in the several branches of medicine. Diagnoses in individual cases are not attempted nor is treatment prescribed. Anonymous letters are ignored.

SCHOOL AND HEALTH

A Department Conducted by J. MACE ANDRESS, Ph.D.

67 Clyde Street, Newtonville, Mass.

Am I as a Teacher a Well Adjusted Person?

THE THIRD OF A SERIES OF EDITORIALS ON THE MENTAL HEALTH OF CHILDREN

THE GREATEST single force in education is the classroom teacher. Buildings, grounds, gymnasiums, pictures, books and courses of study all play a worthwhile part in the training of boys and girls, but it is doubtful whether any of them singly or all of them collectively have as much influence as the teacher. Traditionally schools have emphasized the acquisition of facts and the inculcation of ideals, but modern psychology has discovered that we forget most of the facts we learn in school. Attitudes, however, remain. Children may learn to hate their history and literature, or they may learn to love them so that reading in these fields becomes a joy throughout life. Love of learning is even more important than the concrete facts remembered. The kind of person the teacher is probably counts more in influencing the development of children's ideals than any words taught. Emerson said: "What you are sounds so loud I cannot hear what you say."

The teacher's success or failure in solving her own personal problems of self management are reflected in the schoolroom. Unless the teacher faces life with cheerfulness, courage and confidence she is not likely to win serenity, poise and happiness or inspire such traits in others.

It is unfortunate that many teachers carry their own unsolved problems over to the classroom. Miss J., for example, is notorious for her sternness and strictness in dealing with children who have committed misdemeanors. She rules her school with a rod of iron. She seldom if ever tries to understand why children do things that tend to interfere with school work. Her explanation is the same in every case. Children commit misdemeanors because they are just simply bad. They like to make things disagreeable for the teacher. If we were to step back into Miss J.'s past we might find some explanation for her behavior and attitudes. Her father was a man who dominated his entire family by brute strength. He was a harsh tyrant who used the rod freely and prided himself on the fact that when he spoke his children immediately jumped to obey. His relationship to his own children was that of a bully. It is probable that Miss J. as a child developed an unconscious resentment that led her to get even with the world around her by inflicting unpleasantness on others. It may be that unconsciously she followed the model of discipline which she knew as a child. It is quite probable that many teachers find in teaching a solace for their feelings of inferiority. Not having been able to satisfy their cravings for power they find that a critical dominating attitude toward their pupils makes their own lives apparently more pleasant.

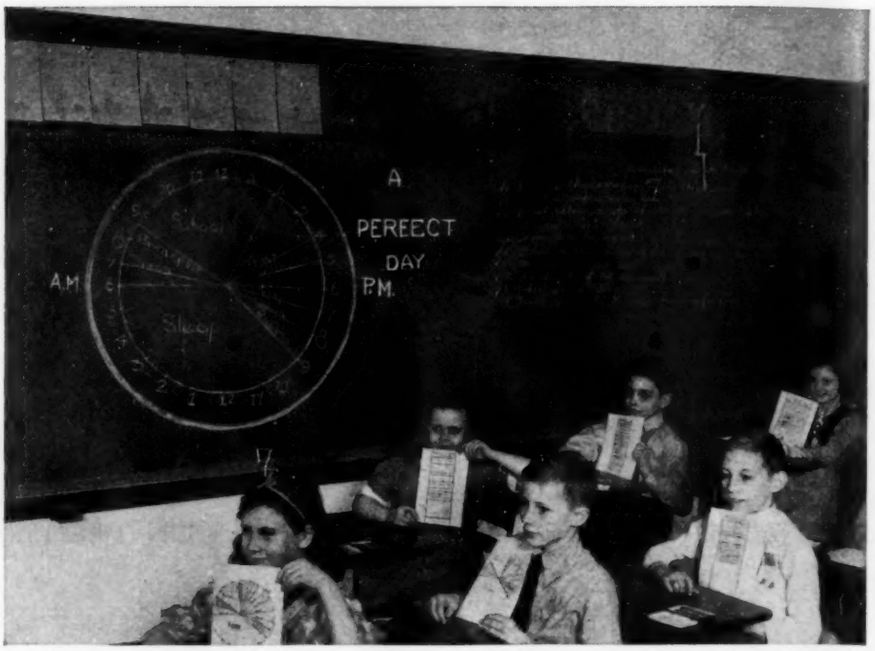
Personality traits indicating maladjustment show themselves in various ways. There are fussy teachers who insist on nonessentials and are therefore constantly meeting with disappointment because they expect accomplishments which are often impossible, stirring up resentment in the pupils. Some teachers are always worried. The most insignificant episode is magnified into the proportions of a world catastrophe. Some teachers regard all children who steal as lost souls. Then there are teachers who are depressed and get no joy out of their work. Most unfortunate of all are those teachers who look on all children as natural enemies. Embittered teachers, no matter what the cause, whether it be disappointment in not being married or failures in self management, become a menace to the welfare of children who should grow up with sane and wholesome attitudes toward life.

Fortunately the teacher can do something to conserve and improve her mental health. She should keep in good physical condition. Regular health examinations and the practice of the regular health habits, such as eating nutritious food and getting sufficient exercise, rest and sleep, help to keep her feeling equal to her tasks. Teachers should try to face their problems squarely. It is so easy in dealing with children to hold them entirely responsible for school failures and misconduct. It is wise for the teacher to get into the habit of turning to a consideration of her own prejudices and methods of teaching for an explanation. The teacher who is mentally adjusted to her work loves children, takes a keen interest in her work, keeps the spirit of the learner and cultivates a wholesome philosophy of life.

Excellent books on mental hygiene are pouring from the press. Most of those especially valuable for teachers have been or will be reviewed in HYGEIA. In "Great Teachers and Mental Health," a book which all teachers should find valuable, W. H. Burnham analyzes the lives, theories and teachings of several great educators of the past and offers many valuable suggestions to teachers today.

To Contributors: — *The editor of the School and Health Department will be pleased to receive articles dealing with the solution of concrete and practical health education problems in the school. Articles must not exceed 1,000 words in length. Stamps should accompany manuscripts to insure their return if rejected. All articles accepted will be paid for at regular rates. Address Editor of School and Health Department of* HYGEIA, *67 Clyde Street, Newtonville, Mass.*

Health and Safety Suggestions for the School Register



THE UNIQUE plan of introducing suggestions on the teaching of health and safety into the New Jersey school register has been adopted by Dr. Allen G. Ireland, director of physical and health education for the state of New Jersey, and his associates. The register is used by every teacher in the state of New Jersey. It is a plan which might be copied to advantage by other state and city school systems.

A school register usually serves but one purpose; namely, that of recording the attendance of the pupils. The teacher uses this book twice a day to check the attendance. Ordinarily the school register contains but a page or so of printed matter giving the teacher directions for keeping the attendance. It occurred to Dr. Ireland and his associates that four printed pages relating to health and safety might well be added. These suggestions deal largely with the teacher's routine activities in health and safety education, activities which should be carried on almost as systematically as the taking of attendance; there is also a general statement of aims and references to the teaching of health and safety.

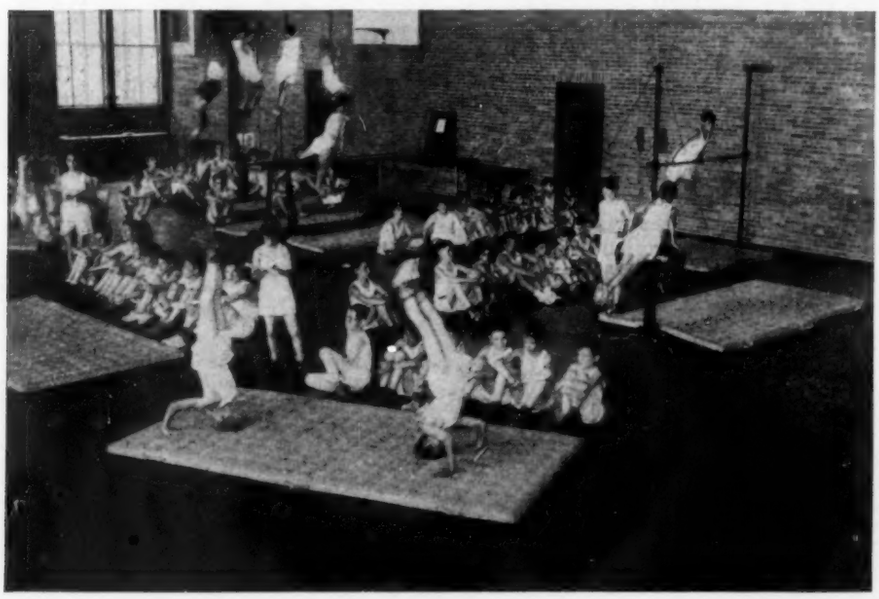
The first section refers to the teacher's part in the control of communicable disease. The classroom teacher is regarded as the key person in prevention and control measures. The teacher is told definitely about symptoms of illness, the need of health inspection at the beginning of school each morning and the reporting of cases of communicable disease. Definite information can be had in regard to the signs of defective vision and hearing, and the health standards required for heating and ventilation, conservation of vision, room cleanliness, seating, and arrangement of the day's program. There is a list of clinics available to the schools of the state and also a list of agencies which furnish material on health and safety.

It is a real achievement to condense so many suggestions into four pages and to hit on the idea of having them in the school register where they will always be accessible to the teacher.

THE HEALTH EDUCATION PROGRAM IN THE PUBLIC SCHOOLS OF BALTIMORE

LILLIAN B. DAVIS
Assistant Supervisor of Health Education
BALTIMORE

During the year the School and Health Department of HYGEIA *will present through its special articles examples of the best health teaching in some of our large school systems. This month we are privileged to give our readers some of the highlights in health education in Baltimore, a city that has won distinction for its modern health program. The following article by Dr. Davis offers a general sketch of this program. The contributions which follow this article are on definite health teaching.*



THOSE WHO read this section of HYGEIA are interested particularly in one phase of health education; namely, that phase which is emphasized in the classroom. But let us ask ourselves these questions: Are we using all other phases of the school health program to help our classroom teaching? Have we led our pupils to understand the purpose of the medical examination? Do they appreciate the physical activities of the gymnasium and playground? Do they understand why some children are sent to open air classes and others to classes for sight conservation? Do they understand the importance of immunization against smallpox and diphtheria? These questions are of vital importance to the big program of health education both for the present generation of school children and for the generations that will follow.

A progressive school system endeavors to have a complete health program. This includes:

1. Medical inspection, which strives for correction and prevention of defects and control of communicable diseases.

2. Physical education which develops agility, skill and strength by activities of the big muscle. Far more important is the program of

games which trains for leisure activities and recreation.

3. Health education which provides definite instruction in health matters leading to the formation of better habits and attitudes.

4. School sanitation which aims toward the proper environment for both pupil and teacher. This demands proper heating, ventilation and lighting, satisfactory seating, good janitor service, hygienic toilets and drinking fountains and many other small but important details included under the name of good school housekeeping.

5. Hygienic programs; this phase considers the questions of fatigue and attention span, length of periods, sequence of subjects, homework, examinations, promotions, classification of pupils and special curriculums.

6. Special classes which provide healthful, wholesome opportunities for children to learn though they may be mentally or physically handicapped.

Only a decade ago this broad health vision for schools was but a dream in the minds of a few. Now it is the goal of every true educator no matter what his rank or teaching assignment. As yet there are relatively few school systems that can boast of having each of these phases functioning perfectly. Baltimore has definitely recognized the importance of each phase and is gradually developing special policies and programs for each. To tell just how Baltimore is doing this would require too much space and time, so that only a few examples will be given.

Educating physically handicapped children has always presented a difficult problem. We have found it more satisfactory to assemble these children in one school. Here their handicaps do not set them apart. To a certain extent we may say they are grouped homogeneously. They become happy in their school life both in following the regular curriculum and in the extracurricular activities.

Genuine consideration has been given to planning hygienic programs for each grade level in our schools. This is perhaps best illustrated by the primary grades, in which teachers do not allow little children to remain quietly at work at desks for any long period of time. Mental and physical activity may well be combined to aid learning, and so we have activity periods which frequently provide the tone for the school day. A similar provision has been made for pupils in higher grades. Here differences in mental ability, achievement and interests make it imperative to provide different curriculums. At the junior high school level, pupils may elect academic, commercial, general or technical courses, or they may decide to go to a vocational or trade school. For those pupils who have not made satisfactory adjustments to school life below the junior high school level there are occupational schools where half of the day is spent in shops and half in the classroom. Many times it has been found that pupils who have been miserable when following the regular curriculum become truly happy when placed in one of these special schools.

For all pupils we seek to keep the tone of school life so adjusted that physical, mental and spiritual growth is made possible. We are definitely conscious of the need for character training during all parts of the school day and are endeavoring to build our curriculums so that character training and mental hygiene are inseparable from school life.

The specific program of health education attempts to establish habits and principles of living that will provide the basis for efficiency and happiness. This requires the skilful use of all approved educational procedures. The class time devoted to health education may be spent in reading, writing or discussion. It may be used for practical demonstrations or experiments. It may be used for dramatic presentations or readings, or it may be a combination of any of these methods and many others. Health courses of study should be definite so that teachers may know what to do, but they should also be flexible so that pupils' needs and interests may be satisfied.

To avoid repetition from grade to grade of such topics as nutrition, cleanliness and fresh air, Baltimore has been experimenting with the following series of units for the intermediate grades: 4B, Helping Ourselves Grow; 4A, Helping Ourselves Work; 5B, The Importance of a Good Body; 5A, Controlling Illness; 6B, Making Ourselves Respected; 6A, General Review.

Satisfactory health habits are essentially a part of each unit, but the approach and emphasis differ. So far we have found the pupils responding much better to this type of health instruction. The material is now under revision for we agree with Dr. Thomas D. Wood that "The greatest need at the present time of health education is for satisfactory teaching materials."

We who are so closely associated with a few specific phases of the school's health program must never lose sight of the whole. Education seeks so to help each individual that he shall develop to the fullest extent and that he may live happily with himself and others.

The articles that follow show some aspects of Baltimore's program of health education.

PRACTICAL HYGIENE IN THE JUNIOR HIGH SCHOOL

LILLIAN B. DAVIS
Assistant Supervisor of Health Education
BALTIMORE

Can instruction in hygiene in the junior high school be made practical for everyday living? What instruction is needed? What units should be planned? How may the results of instruction be tested? These are some of the vital questions that Dr. Davis asks and attempts to answer for the junior high schools of Baltimore.

ONE DAY in a junior high school classroom a rather frail girl gave a gasp, attempted to walk to the teacher and collapsed on the floor. The other pupils were astonished, to say the least, and naturally stood up to see the sick girl. This lasted only a moment for the class had been trained in first aid.

One boy who was seated near the patient said quietly, "Every one keep away; give her air for she has fainted." Another boy quickly left the room and returned with some water while the teacher straightened the patient and held aromatic spirits of ammonia to her nostrils.

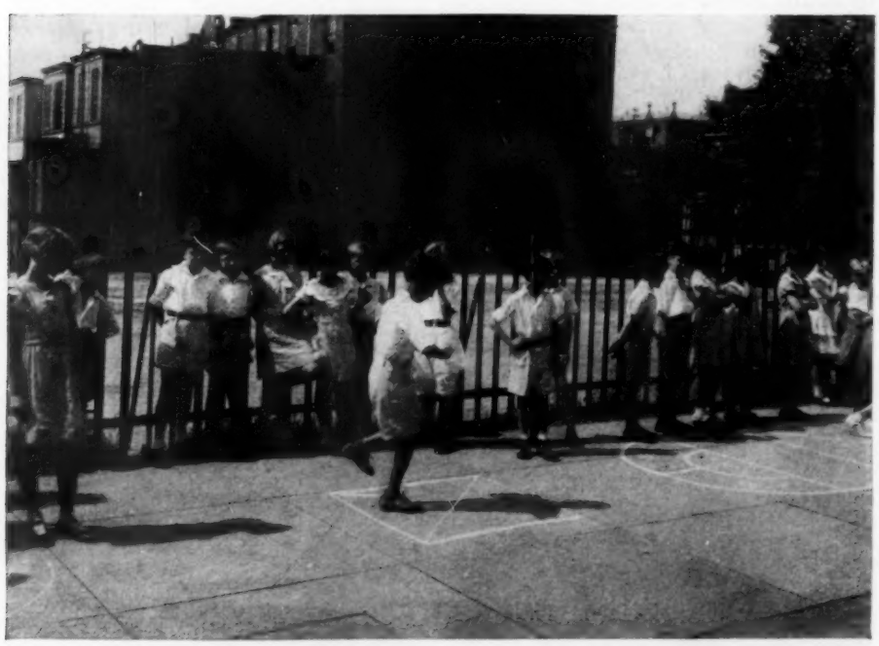
The teacher, who was keenly aware of the educational possibilities of the situation, asked this question, "Shall we lift Mary to a seat?" "No," came in chorus from the class, followed by various remarks to the effect that a person who has fainted should always be kept lying down. After this the class was quiet and at the suggestion of the teacher continued the notebook work. In a few moments the patient regained consciousness. She was given a dose of aromatic spirits of ammonia and allowed to sit at her desk.

Fortunately such incidents do not occur frequently, but the reaction of the pupils to this one leads us to believe that because of their instruction in first aid they will react properly and know what to do whenever an accident occurs. The instruction in first aid is a part of the hygiene course which must be taken by every junior high school pupil. The emphasis is threefold; namely, how to behave, what to do and the necessity of calling a physician. One of the first things a pupil learns is that first aid is only the temporary treatment and never takes the place of the services of a physician.

Such instruction, given under the title of Hygiene, has a practical value for everyday living. It satisfies one of the big aims of our junior high school program: to make health instruction so positive and practical that it can be immediately used in the daily lives of the pupils.

The second unit in the 7B course concerns the prevention of communicable diseases, a subject selected because most sickness in any community is caused by communicable diseases. The next advance must be made by the individual. He must be so trained that he will erect around himself a wall of biologic cleanliness. To accomplish this, pupils must understand something about the nature of microbes, how they enter and work in the human body and how they can be fought. This objective is accomplished in the unit, Prevention of Communicable Diseases, by means of experiments which each pupil may do for himself and by various reading assignments with questions to guide the pupil in his thinking and comprehension of the subject.

The third unit, How Our Bodies Use Food, attempts to do two things: to review and fix firmly in the pupil's mind the basic principles of good nutrition and to convince the pupil that these principles are scientifically based on what our bodies actually do with the food which they receive. The immediate practical application is to make a menu for a day which is complete in all respects. Incomplete menus are also studied, and the necessary foods are added to make them complete. The purpose here is to help the pupils realize that the addition of certain foods to otherwise incomplete menus will often result in perfect combinations. A second advantage is that it prevents the pupils from getting the idea that the food at home is all wrong. Needless to say, at the present time "the best food for the least money" is an important consideration.



After the three units have been taught, just how much have the pupils learned and how much of what they have learned do they use? The success or failure of the course depends on the answers to these questions.

Since a person must acquire knowledge before he can use it, considerable time was spent by a group of teachers to develop an objective test on the content of each unit. This work began in 1930 and culminated in 1934 in a complete testing program for all 7B hygiene classes. As a result of the testing, inexperienced teachers found where reteaching was necessary; from the distribution curve of 3,000 scores, comparisons were made between single classes or individual pupils and all the 7B pupils, and finally the test results indicated that the pupils were actually learning the content of the three units.

It is more difficult to find out whether or not pupils are using the knowledge they have acquired than it is to measure the extent of their knowledge. Here we are dependent on observation rather than testing in determining the practical applications of knowledge.

It is relatively simple to observe practical applications of first aid training, such as the incident mentioned in the beginning of this article. The practical applications of the unit on the prevention of communicable diseases are shown by more frequent use of handkerchiefs, turning heads when coughing or sneezing and a conscious effort to avoid spreading colds. For a while at least the cleanliness level of the classes rises. Some inquisitive pupils perform original experiments such as observing the effect of various antiseptics on the potato cultures or rubbing a coin on sterile potato and observing the bacterial growth, an experiment which convinced many pupils that money should never be placed in the mouth.

The school and classroom offer small opportunity to observe food habits of pupils. In the cafeterias the pupils are limited financially, so the observations are necessarily meager. Yet a few changes can be noted. During the past several years there has been an increase in the sale of milk, vegetables and salads with a corresponding decrease in other articles such as cake and candy. Sales of fresh fruit, on the other hand, have not increased because the pupils are urged to bring fruit from home as it is less expensive and to spend their money for other foods not so easily carried.

A rather recent development in Baltimore is the inclusion of hygi-

ene in the general curriculum for 8A pupils. Frankly, the course of study is experimental. It is being developed slowly by the teachers, who have agreed on these objectives:

1. To develop respect for and appreciation of the human body.
2. Through a study of physiology to establish reasons for hygienic habits of living.
3. To show that the individual has considerable influence over his body and mind and can determine to a large extent their condition.

Some of the units included are: How the Body Works; How the Body Is Controlled; Development of a Healthy Personality; Quackery and Nostrums.

These older pupils are interested in the workings of the muscles and nerves, so this provides the approach to the study of fatigue, alcohol and narcotics. Referring to the famous saying of Barnum, "The people love to be humbugged," the door is opened to a study of quackery and nostrums. Do the pupils like it? Are they interested? This is truly one of the high points of 8A hygiene. It is capitalized by wise teachers who lead the pupils to contrast scientific with unscientific health practices. Certainly this is practical hygiene. It can be used now and always in the endeavor "to live most and serve best."

SAFETY GAMES FOR BALTIMORE CHILDREN

BERTHA M. SCHOOLS
Supervisor of Physical Education, Elementary Schools
BALTIMORE

Are most of your pupils limited in their play to city sidewalks? If so, the problem of providing for safe and wholesome play is a serious one. In Baltimore, teachers and pupils have devised some clever and interesting sidewalk games. Perhaps you may be able to use some of them in your school or devise some equally good ones yourself.

"LIVE DANGEROUSLY" says a noted university professor. In this age of swift change, we must perforce "live dangerously," since more than in any other age, we are called on to face the new and untried. To dare to choose a different path is to live dangerously.

From the standpoint of personal safety alone, we live dangerously whether or not we want to when we cross the street of a busy thoroughfare or drive on the main highways. Our cities are supposed to be places in which to live as well as to work, but usually only the adults are considered in their planning. What about the children? How are they adjusting themselves to this hectic world of machines? Daily the newspapers are printing the terrific death toll. In spite of safety campaigns the number of accidents are not decreasing each year. It behooves every one to do something about the problem.

Several years ago when the assistant supervisors of physical education in the elementary schools of Baltimore studied the particular possibilities, limitation and needs of the schools they visited, they found that the majority of the city children had only the sidewalks on which to play during their leisure. The physical education program at that time emphasized games that could be played only in the gymnasium or school playground. Many of the best games required the use of balls. It seemed impractical to urge children to play ball games on the sidewalks which were often the only play spaces at home. The unruly ball might roll onto a dangerous street. An addition to the course of study was in order, and all hands went to work collecting new material and revamping the old. The children themselves proved to be the best aids in search of adaptable material. They had made adjustments to fit certain conditions in a most admirable way. For instance, in one school the principal had forbidden the boys to play baseball on account of the danger of hitting other children with a hard ball. The boys devised a game they called Underleg. The pitcher pitched the ball to the batter, who instead of batting the ball, tried to catch it with his hand; if he missed, a strike was called. If he caught it, the ball was thrown under his raised knee, and bases were run in the same way as in baseball. Throwing the ball under the leg kept the ball in a smaller area, and there was less danger of accidents. This adaptation was included in the course of study and taught to all other schools where the play space was limited and regular baseball tabooed.

All games that could be played on sidewalks were collected. The Italian children had one form of hop scotch, and the Polish had another. These and many others were observed, and rules and descriptions were written down. What a collection we had! Some of the titles such as Tin Can Jimmy and Fool Ball were coined by the children. Although not very elegant names they were listed under the title of Sidewalk Games. The various forms of hop scotch were decidedly the most popular and because of their safety value were stressed more than the others. Diagrams of each were painted on school sidewalks or brick playgrounds with white traffic paint, and when a school was fortunate enough to get a new concrete sidewalk or playground the school department stamped these diagrams permanently into the concrete by means of a template. A labyrinth of diagrams for hop scotch and other games marks the pavement of almost all the elementary schools. In a sense they resemble some mysterious and secret symbols, for only the children understand them completely.

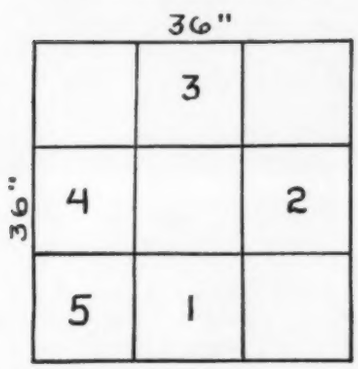
Even though we are called the "exterior decorators" we feel compensated when we see the large numbers of boys and girls playing the games of their choice and ability before and after school, at recess or any other free time.

Through tournaments the interest of the boys as well as girls was stimulated. The boys at first thought the games a bit too "sissy." After learning and perfecting the rules of the more intricate types of hop scotch they declared it "a pretty swell game."

Many principals have found this the solution of the "before school problem." Children now come directly to school and spend the time before the bell rings in playing safe games instead of loitering along the way and getting into mischief. The "carry over" qualities of these sidewalk games bring further satisfaction since they can be copied on the home sidewalk and many happy hours can be spent profitably in the sunshine. Many thoughtful parents have asked for the proper measurements of the various hop scotch games so they may paint the diagrams on the floors of basement game rooms.

These are a few of the favorites of the Baltimore children:

SQUARE HOP SCOTCH



The diagram is drawn on the floor or pavement, and the players in turn do the following stunts:

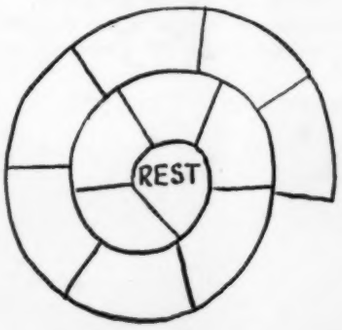
Stunt 1.—Player stands before square 1, jumps into center square of the first row of three squares with both feet; jumps and spreads feet apart in the two outer squares of the first row; jumps with feet together again in the center square, and then jumps backward out of the court.

Stunt 2.—Player stands before square 1; jumps with both feet into the center square of the second row of three squares; spreads feet apart in the two outer squares of the same row; jumps feet together again in center square, and then jumps backward into the center square of the first row and repeats as in stunt 1.

Stunt 3.—Player stands before square 1; jumps with both feet into the center square of the third row of three squares and continues as above, progressing backward through the three rows, same as in stunt 1. Player repeats the foregoing stunts at squares 2, 3, 4 and 5.

Fouls.—To step on a line of the diagram. Failing to jump in squares in proper order. After fouls are made, players in their turn may start at the stunt where the foul was made.

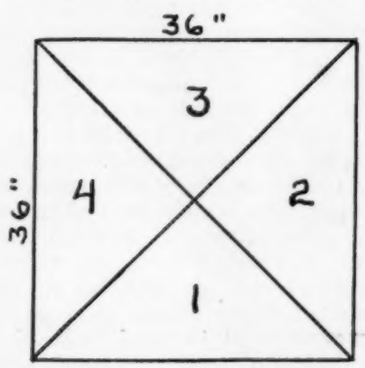
SNAIL HOP SCOTCH



The diagram is drawn in twelve blocks on the floor or pavement in the shape of a snail, and the players in turn hop around to the space marked "Rest" without touching any lines of the court. The player will rest here on two feet, then hop back to starting place. If a successful trip is made the player may place his initials in any of the twelve blocks excepting the "Rest" block. The following players hop into every block excepting those having initials, following the same procedure as the first player. Each player may rest in the block that has his initials.

Fouls.—To step on a line of the diagram. To put both feet on the ground while hopping.

ENGLISH HOP SCOTCH



The diagram is drawn on the floor or pavement, and players in turn do the following stunts:

Stunt 1.—Player stands in front of 1, places a flat stone on the palm of the hand, hops into 1 and around the court, 1, 2, 3, 4, 1 and out.

Stunt 2.—Repeat stunt 1 with the stone held on the back of the hand.

Stunt 3.—Balance stone on shoe, and walk through court.

Stunt 4.—Balance stone on shoulder, and walk through court.

Stunt 5.—Balance stone on head, and walk through court.

Stunt 6.—Balance stone on forehead, and walk through court.

Fouls.—To step on a line. To have stone fall from position while performing stunt.

FOOL BALL

Players stand in flank formation side by side with arms folded. A leader stands about 6 feet in front, facing players. The leader pretends to throw the bean bag to the first player and tries to fool him in every possible way. If the player moves any part of his body in an attempt to catch the pretended throw, he loses his position and goes to the end of the line. When the leader finally throws the bag and it is successfully caught by a player, that player may take the place of the leader.

NEW HEALTH BOOKS
for teachers and pupils

EDUCATIONAL DIAGNOSIS

THE THIRTY-FOURTH YEARBOOK OF THE NATIONAL SOCIETY FOR THE STUDY OF EDUCATION. Edited by Guy Montrose Whipple. Paper. Price, $3. Pp. 563. Bloomington, Ill.: Public School Publishing Company, 1935.

THE word "diagnosis" is fundamentally a medical term. It refers to the technics used by the physician to discover the cause of disease and malfunctioning so that cures and corrections may be made. In recent years, educators have been impressed by the large number of children in our public schools who are physically and mentally handicapped. In addition to this number, estimated at 3 million by the White House Conference on Child Health and Protection, there are thousands of other children who are mentally and physically normal, but who are maladjusted socially, morally or emotionally. A consideration of such facts has led educators to adopt the general technic of the physician so as to discover both the strength and the weakness of individuals so that they may be guided more effectively.

Educational diagnosis and guidance has grown so rapidly that the National Society for the Study of Education has been led to publish this exceedingly timely and valuable yearbook.

The book concerns itself with the diagnosis and treatment of behavior disorders and with other objectives such as speech, leisure activities, musical talent and health education. In the fields of regular instruction, reading, English, arithmetic, social studies and science are also in-

(Continued on page 276)

Don't Wait for TOOTHACHE

To Remind You That Your Teeth Need Attention

TOOTHACHE is Nature's warning that disaster has overtaken the teeth. But, fortunately, this pain and the possibility of serious dental trouble can be avoided by seeing your dentist at least once a year.

He will thoroughly examine your teeth . . . Make *Bite-Wing* radiographs of the 60 hidden surfaces which examining instruments will not reach, which only x-rays can penetrate. Thus, he will painlessly disclose any cavities in their early stages.

Each member of your family should see his dentist regularly and have a *Bite-Wing* x-ray examination once a year. Remember, a small cavity today will develop into extensive decay if it is undetected and untreated. But with periodic *Bite-Wing* examinations, every cavity can be discovered . . . Needless pain and expense saved.

"How to Prevent Toothache," a booklet devoted to proper care of the teeth, tells more about the benefits of the Bite-Wing x-ray examination. Mail this coupon for a free copy.

X-RAYS WILL HELP TO KEEP YOU HEALTHY

EASTMAN KODAK COMPANY, *Medical Division*
347 State Street, Rochester, N. Y.

Please send me a free copy of the booklet, "How to Prevent Toothache."

Name_____

No. & St._____

City & State_____

"I want to bring the children to your office, doctor. They seem well, but it is time for another examination."

When do you see your Doctor?

IF YOU wait until sickness develops you are taking advantage of only part of your doctor's skill. Make him your Health Counsellor at all times—not only when you are ill, but when you are well. It is the modern way to take care of yourself.

See your doctor at regular intervals. He is familiar with the prevention of various diseases which were once regarded as almost unavoidable, and the control of others that less than forty years ago were often fatal.

Do you know the latest findings of medical science on such subjects as preventive inoculation and vaccination? Do you know that the heart and other organs should be carefully examined, after every attack of an infectious disease, to see whether or not they need temporary or continuing care to lessen the danger of lasting injury?

You and the other members of your family should have a regular and complete physical checkup. Unsuspected impairments, abnormalities, deformities and bad health habits may be discovered and corrected. There are certain conditions which do not produce immediate symptoms, but which will do so in the future if left uncorrected. Let your doctor advise you on matters of diet, rest and exercise.

The Metropolitan from time to time reports how physicians help people to prevent many diseases and ailments which afflict different age groups—Babyhood; Childhood; Adolescence; the Age of Maturity; the Prime of Life; and the Sunset Years.

The Metropolitan will be glad to mail free its booklet on health protection at all ages. Send for your copy of "Taking Your Bearings" Address Booklet Department 336-Z.

Keep Healthy—Be Examined Regularly

METROPOLITAN LIFE INSURANCE COMPANY

FREDERICK H. ECKER, PRESIDENT ~ ONE MADISON AVENUE, NEW YORK, N. Y.

© 1936 M. L. I. Co.

Do You Know—

1. The true meaning of the term "orthopedics"? *See page 230.*
2. That untimely deaths of famous persons have often altered the course of history? *See page 257.*
3. Why vomiting is never a "healthy sign"? *See page 208.*
4. The underlying cause of parents' embarrassment where sex education of their children is concerned? *See page 220.*
5. How the modern upper plate fits into the mouth? *See page 252.*
6. How an emergency operation may safely be performed at home? *See page 227.*
7. What was Hideyo Noguchi's outstanding contribution to medical science? *See page 245.*
8. Why training of the layman is so important in regard to asphyxiation emergencies? *See page 233.*
9. What is meant by the "learning by doing" method of training the backward child? *See page 212.*
10. The most common food problem of the traveler? *See page 226.*
11. The cause and effect of argyrosis? *See page 214.*
12. That cancer is curable? *See page 202.*
13. That America was a land almost free from infectious diseases prior to the coming of the white man and the Negro? *See page 205.*
14. The several important functions of the skin? *See page 247.*
15. What to do with the child who refuses to eat? *See page 217.*
16. What causes varicose veins? *See page 237.*

ADULTS ARE GOING TO SCHOOL NOW!

Twenty years ago adult education was only a speck on the horizon, discernible by a few far-seeing souls. Today it sweeps into view as perhaps the most commanding of all our social interests. *Vital Speeches* presents the opinions of Dr. Harry A. Overstreet on the subject of adult education.

We are suddenly realizing that some pretty vital matters were left out of consideration in that older world of specious prosperity, of get-rich-quick, of war and exploitation. What was chiefly left out was the genuine cultivation of individuals. The truly forgotten man was the adult. That older world took a human being as a child and gave him a hasty preparation for life; then set him loose to work as best he could with his unmatured mind and his unsocialized emotions. We now know that no individual can be fully trained for his mature life in the days of childhood. The enterprise of turning an individual into a genuinely competent and wise adult must be carried on in the adult years. Our adults have been chiefly adolescents of mature years.

Adult education is no panacea. It is a basic necessity. The future will be a hopeful one in the degree that we take seriously in hand the new enterprise of helping adults grow into a fuller and wiser life.

Much of difficulty in the world has arisen out of sheer provincialism of mind and emotion. Adults have lived within their own narrow groups, looking with suspicion on other groups. Nations have looked over their borders at other nations, never really understanding them or appreciating their problems. We have been a poor, torn world largely because we have had little opportunity to see others as they see themselves, or to be seen and known by others as we see and know ourselves.

Adult education should perform the necessary task of discovering the unsatisfied needs and wants of adult life. It will reanimate the whole educational system. Where in the past, education has been confined to the immature years, it will now open out into a continuous process extending throughout a lifetime. Adult education will concern itself essentially with the development of the forward-looking mind so that the individuals who comprise our civilization may be enabled to move easily and wisely along the paths that lead to further enrichment.

Millions of Mothers would be happier

●●● more content, if they knew what some school officials are doing to give children an education *without sacrificing health.* It is so unnecessary to have to worry about your child's health at school. You need but support the health programs of educators, one phase of which is the providing of *posturally correct* and *eye protection school seating* for children.

Obsolete seats which force the child to slump or stoop, cramping vital organs and injuring health, are on the way out. Cooperate with school officials who want to replace them with *Eye-Protection* desks.

This *new* type desk not only makes it natural and comfortable to sit posturally correct . . . but provides, as well, a movable book support which *minimizes eyestrain* by enabling your child to read or study with book at correct height, focal distance, and angle of vision.

School officials will be grateful for the interest of Mothers and Parent Teacher Associations in their efforts thus to guard child health.

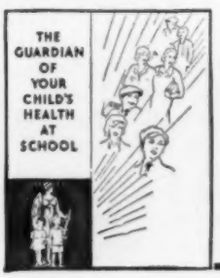
American Seating Company

Makers of Dependable Seating for Schools Churches and Public Auditoriums

General Offices: Grand Rapids, Michigan

DISTRIBUTING BRANCHES IN ALL TRADE AREAS

Send For



If you have a child at school or will have, you need this interesting, enlightening booklet. Fill in and mail the coupon for a free copy.

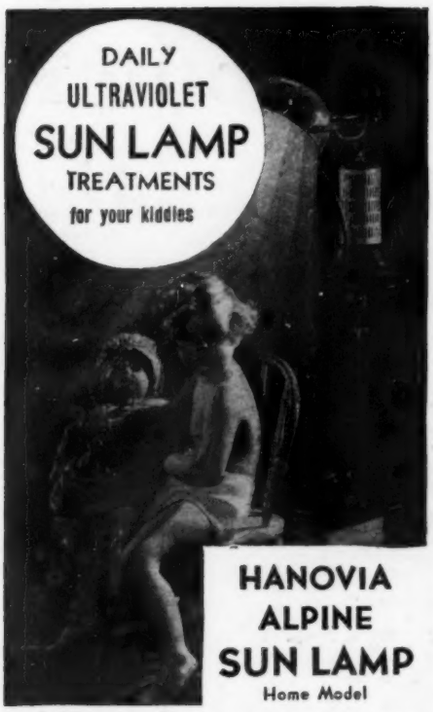
American Seating Company (H3)
Grand Rapids, Michigan

Please send me, without cost or obligation, a copy of your booklet, "The Guardian of Your Child's Health at School."

Name_____

Street Address_____

City_____ State_____



HANOVIA ALPINE SUN LAMP
Home Model

A few minutes daily of ultraviolet rays from the Hanovia Home Model Alpine Sun Lamp will promote the development of sound bones and teeth in your youngsters—will be especially helpful in preventing rickets. Remember this convenient sun lamp brings its benefits regardless of dull days, stormy days or wintry weather.

See your local department store, electrical or medical supply house for a demonstration. Send for illustrated booklet to Dept. 44-C.

Table Model $99
F.O.B. Newark, N. J.

May be purchased on deferred payment plan

Accepted by the Council on Physical Therapy of the American Medical Association

HANOVIA CHEMICAL AND MFG. Company
NEWARK, N. J.

PLEASE MENTION HYGEIA
WHEN
WRITING ADVERTISERS

The AP-UPLIFT TRADE MARK

By Mme. Poix

Doctors Say

that just before and after baby arrives it is important to give the breasts the upward converging control obtained only by the Patented A.P. Uplift, designed by Mme. Poix. Prescribed extensively and used by Hospitals and Maternity Centers.

Sizes 30 to 44

Mercerized Repp.....$1.00
Flesh Tussah Silk... 1.50
Flesh Mesh..... 2.00
Flesh Jersey..... 2.50

If not at dealers, order direct giving exact bust measure next to skin.

Studios of G. M. POIX, Inc.
103 Madison Avenue, NEW YORK, N. Y.

SCHOOL AND HEALTH

(Continued from page 272)

cluded. The chapter on Diagnosis in Health Education was prepared by Dr. Don W. Gudekunst. Although heavily weighted on the side of the medical services in the schools and referring very little to diagnosis in relation to instruction, it has many valuable suggestions for the teacher. His criticism of some of our health instruction under the caption of Health Habits is most challenging in places. For example, "Frequent bathing," he says, "is not a health essential. A person would live just as long, just as healthily, without a daily bath as with one. Undoubtedly he would not be as happy or as comfortable or as acceptable to his fellows as though he were to bathe more frequently." Dr. Gudekunst goes on to say that "Sound social reasons for the development and perpetuation of the so-called 'health habits' have been overlooked or minimized while school authorities have been engaged in pushing to the fore the unproved or even questionable health value of these same practices."

Those who wish to get a grasp of this newer movement of educational diagnosis should read this book with care. It contains a mine of information and will probably rate as one of the most significant publications of the past year.

MILESTONES OF PUBLIC HEALTH IN AMERICA

Health Poster. New York: American Public Health Association.

THIS INTERESTING poster in black and white is designed to point out the great historic milestones of public health in America. The miniature line drawings with their captions are arranged in nine columns called Laboratory, Tuberculosis, Organization, Sanitation, Vital Statistics, Communicable Diseases, Food and Drugs, Public Health Nursing, and Prenatal, Infant and Child Hygiene. Looking along the column headed Sanitation one notices that the first milestone was in 1647 when an act was passed forbidding the pollution of Boston Harbor. Following this we learn that Benjamin Franklin organized the first street cleaning department at Philadelphia. So the story goes on. This would stimulate investigation on the part of pupils if it were hung in a classroom or put on a bulletin board where it could easily be studied. It might serve as the basis for a unit of work.

"What shall I Buy, Doctor, for *Baby's Outfit?*"

Choose your layette from famous VANTA Garments as recommended By Physicians, Nurses and Mothers for over 23 years!

THAT first critical month of Baby's life . . . the serious months that follow until steady normal progress is assured . . . these are the months that Baby and you will profit most from Vanta Garments. This is why—

Vanta Garments do away entirely with the dangers and discomforts of pins, buttons, and other fastenings. Pins become unfastened, and loose, opened pins may be swallowed. Even closed pins jab mercilessly. Buttons, too, bruise, and when broken, scratch and gouge. Baby's sudden crying spells that rob his healthful rest . . . *and yours* . . . can often be traced to pins and buttons. Vanta Garments for small babies have no pins—no buttons, and for mothers who desire them, *no fastenings of any kind.* You save nearly half Baby's dressing time the Vanta way.

Vanta's exclusive *Silvalining* brings super-absorbency, and new warmth and softness to Baby's precious wardrobe. All Vanta Garments in Layette sizes are *steam sterilized* and are packed in germ-proof, sealed packages.

Insist on *Vanta* Baby Garments in the Infants' Wear Department of your favorite store. Complete Vanta Layettes are on sale there at surprisingly reasonable prices.

NEWS NOTE: Vanta Baby Garments have just been awarded the coveted Good Housekeeping Guarantee. Go to the local store that features Vanta Garments and get Vanta Quality for your Baby.

Vanta BABY GARMENTS

FREE Send for free copy our new 80 page book "BABY'S OUTFIT." Covers 55 subjects of vital interest to expectant mothers. 500 name suggestions. Use coupon below.

EARNSHAW KNITTING CO.,
Dept. H-336, NEWTON, MASS.
Please send me free copy "BABY'S OUTFIT"
Name.....
Address.....

WHEN SHOULD PEACE EDUCATION BEGIN?

Wide-eyed children gathered around a toy counter featuring the latest in toy machine guns. An energetic saleslady invited each one to "try and see how many you can kill." When asked, "Whom do you want to kill?" there came the quick rejoinder, "We know, lady. We want to kill the Japs!" *Childhood Education* cites this example to substantiate the claim that the education of children for war, or peace, begins in the forming of attitudes of hostility or friendship early in life.

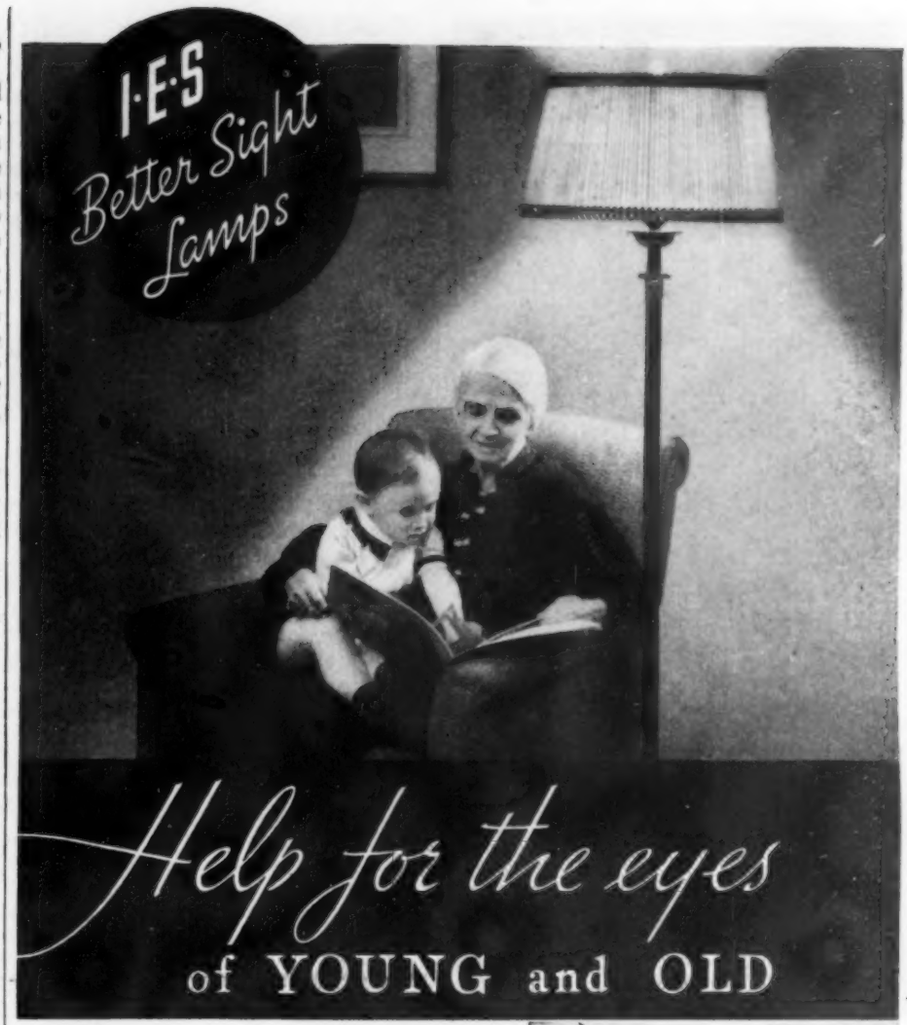
In childhood education, peace can become rooted. One way is through toys and books that first bring close, then tell of children of other lands. Stress should be put on similarities rather than differences. "Children with joys like you and me in other lands across the sea."

The book "Children Around the World" was given to a 4 year old who loved the ocean deeply. To her it was "my ocean." In the book she found a picture of a little Chinese boy and was told he lived on the other side of the blue waters. The next day she asked, "May I take my little Chinese friend down to see *our* ocean?"

Children can be educated for peace. Of that, psychology and experience leave no room for doubt. The question mark remains until "can" is substituted for "will."

America was made by its system of free education; in no other way could its soul—as a single soul—have gone marching on triumphant and unafraid. The America of tomorrow is just as surely being made in the tens of thousands of schoolrooms where nearly one fourth of all the inhabitants of the land are being taught who we are and why we are and that democracy is for the average man the best form of government yet devised. There are things very wrong about some of the schools, some things that are wrong about all the schools, but of them all it may be said that they are the living embodiment of the spirit that made us a nation, the very symbol of our freedom. We wish that they took into account some more deeply significant things—God, duty, neighborliness, social responsibility, world consciousness—but even without these they are the very core of the nation's life.

—*William Frederick Bigelow.*



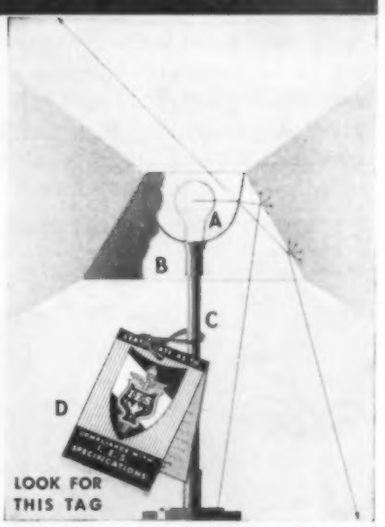
I. E. S. Better Sight Lamps aid the eyes of every age.

They give the kind of lighting that helps young eyes develop normally; that helps older eyes see with greater comfort.

I. E. S. Better Sight Lamps were developed by the famous Illuminating Engineering Society to provide sight saving lighting for reading, writing, study, sewing and all close work.

They give ample, mellow light, free from glare, and properly diffused . . . the kind of lighting that reduces preventable eyestrain and makes seeing easier.

You can obtain these lamps at your furniture store, department store, electrical dealer, or lighting company, in a wide variety of beautiful styles. Send for a free booklet called "Help for your Eyes." I. E. S. Better Sight Lamp Makers, 2116 Keith Bldg., Cleveland, Ohio.



FEATURES OF I • E • S BETTER SIGHT LAMPS
(a) Glass bowl reflects light upward and sends diffused light downward as indicated by lines; (b) Specially treated shade reflects twice as much light as ordinary shade; (c) Correct height gives wide spread of light; (d) I. E. S. authorized tag certifies that lamp complies with 54 specifications of the Illuminating Engineering Society for lighting effectiveness, mechanical soundness and electrical safety.

Better Sight I·E·S Lamp Makers

STEEL OFFICE CHAIRS

BEAUTIES TO LOOK AT
BEAUTIES TO SIT IN
LIGHT IN WEIGHT

NOW steel office chairs take on an entirely new importance! Beautiful design and luxurious comfort are now combined in the modern manner in steel chairs. Here are chairs beautifully done in steel yet ruggedly constructed — with less weight than comparable models in wood. Equally important is the fact that this distinguished line of chairs is moderately priced, quality and style considered.

FREE Write for brochure, entitled "Smartly Styled in Steel by Harter," giving all details. Dealers: Some sales territory still open.

The HARTER Corporation
Address Sturgis, Mich. Desk M4

MANUFACTURERS OF THE WORLD'S FINEST SEATING EQUIPMENT

FATHERS CAN BE THEIR SONS' BEST "PALS"

A famous educator said recently, "Depend upon it, most boys dislike their fathers."

The Parents' Magazine discusses the basis on which a lasting father-son companionship may be built. Mutual understanding with one's son can come only through affectionate companionship, which, however, may not be had for the asking. To achieve it requires much more than the passive treatment that characterizes many father-son relationships.

"My father," one son wrote in part, "was the best man I ever knew. He would not tolerate in us children selfishness or cruelty, idleness, cowardice or untruthfulness. . . . With great love, patience and the most understanding sympathy and consideration, he combined insistence on discipline. . . ." The name of this father was Theodore Roosevelt. Men may differ in their evaluation of Theodore Roosevelt, as president, but so far as is known, none has ever questioned his success as a father.

On the other hand there is the father who writes a letter like the following in answer to his son's enthusiastic letter telling of his busy life and his many activities at summer camp:

"My dear Ronald: I see that again, in spite of your many duties, you do find time to write when you want something. This time I happen to be very busy myself, and it is entirely too hot for your Mother to go into town, so you will have to do without the special white pants and wear your white knickers.

Am enclosing your letter of the 10th inst. so you may read it over. In the first place your attention is called to the fact that you have used the pronoun 'I' 17 times in this little short letter.

Do not neglect to send me a copy of your Play. Your loving Father."

This man, a university graduate and head of a prosperous concern, is known by his intimates as "a good sport," a charming fellow socially and "a born wit." Yet where his son is concerned he shows an amazing lack of understanding and sympathy.

In the basement of the home of a distinguished architect is a completely equipped workshop. His boys had a large share in equipping it with savings from their allowances. Regularly, two evenings a week at least, father and sons work together at a variety of tasks. Given the same urge, any father could duplicate this happy experience if he would.

Physiologic Birth Control

THE RHYTHM
Of Sterility and Fertility in Women

A Discussion of the Physiological, Practical and Ethical Aspects of the Discoveries of Drs. K. Ogino (Japan) and H. Knaus (Austria) Regarding the Periods When Conception is Impossible and When Possible.

By LEO J. LATZ, M.D., LL.D.

100th Thousand
$1.00 per copy
at bookstores or from
LATZ FOUNDATION
1235 Republic Building CHICAGO, ILL.
Write your name and address on a postal card, mail it to us and we will send you our
FREE PAMPHLET

HYGEIA NURSING BOTTLE
...SAFE
because it is easier to clean

FREE
6 SAFETY POSTERS
with each year's subscription

Posters
Stories
Plays
Lesson Plans
Informational Articles

SAFETY EDUCATION MAGAZINE
$1 A Year

An excellent publication for both teacher and pupil. Devoted to practical safety teaching material presented in a modern manner.

SAFETY EDUCATION MAGAZINE
One Park Avenue • New York, N. Y.

Do You Need Health Material?

Send for free catalog—

"Health Publications of the American Medical Association"

American Medical Association, 535 N. Dearborn St., Chicago

"Your baby's tender skin needs this waterproof protection"

There is nothing like Merck Zinc Stearate for keeping baby's skin healthy and comfortable.

While some powders make an irritating paste when diapers are wet or baby's skin is moist from perspiration, Merck Zinc Stearate forms a *dry, delicate film* that affords protection against irritation. It is soothing and healing to baby's skin —prevents diaper rash and chafing.

Merck Zinc Stearate is pure, fine and velvety-soft. It comes in an attractive can with a self-closing top. Your physician and druggist will tell you that the name Merck on any product is a guaranty of purity and reliability.

Merck & Co., Inc., Manufacturing Chemists, Rahway, N. J.

MERCK ZINC STEARATE

CAN THE HOME BE A "SPIRITUAL CENTER?"

Too often in the past, parents have assumed that if only they could give their children educational advantages and surround them with beauty in the home, spiritual qualities could be left to take care of themselves. To make the home a spiritual center is to make it a place where four simple but fundamental qualities are developed through exercise: honesty, purity, unselfishness and love.

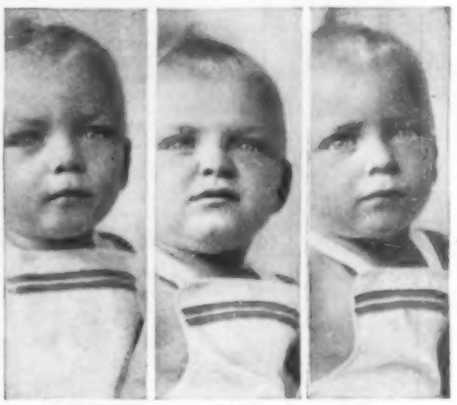
While this fact seems obvious, yet many modern homes are centers of petty jealousies and deceit, homes, for example, where the parents so sacrifice themselves to the child that he never learns the meaning of honesty or unselfishness. What is to be done? Suppose, instead of punishing a child for an outburst of temper, the mother wisely investigates the cause of the irritation packed away in the recesses of the child's ego. She may have to reveal to him the causes of her own outbursts of temper. It will not be easy; but the child will realize that what is desirable is not to *appear* loving but to *be* loving. Seeing that his mother can be honest and loving without effort, he will realize that such qualities are to be striven for.

It is in the home that the environment necessary for the success of such an experiment can be controlled. In the busy world outside are conditions which cannot be controlled. But those factors requisite for the success of the home life can be brought in. To make the home such a laboratory is to make it a cultural, spiritual center. Then from that center would go out men and women to carry into the confused world the qualities so greatly needed.

The National Parent-Teacher magazine asks, what do we mean by "spiritual" and "cultural?" According to Matthew Arnold, culture is defined as "acquainting ourselves with the best that has been known and said in the world and thus with the history of the human spirit." One definition of the spiritual life runs this way: "Freedom from worldliness and from attachment to the things of time and space."

Therefore if parents try to develop in their children those standards shown to be enduring through the collapse of many civilizations, the highest yet set before man, they may well become the leaders of the new day. And the young people are equipped to find satisfactions, whatever the passing standards of their day.

NO DIAPER RASH FOR THESE TRIPLETS!



EDDIE DICKIE BILL

Mothers of triplets have to be *extra* careful. They can't afford to take chances in the way they wash baby garments. That's why the mother of Eddie, Dickie and Bill insists on Lux. There's no harmful alkali in Lux, as in so many ordinary soaps, to irritate and chafe a baby's skin—cause painful rashes. Wise mothers everywhere use gentle Lux for everything of baby's.

WON'T IRRITATE A BABY'S TENDER SKIN

CONCISE—AUTHORITATIVE—MATTER-OF-FACT —COVERS EVERYTHING

"A Child is to be Born"

Reprinted for expectant mothers from the series in "Hygeia"

Symptoms—Exercise Diet—Clothing 15c American Medical Assn. 535 N. Dearborn St., Chicago

SEX BEHAVIOR IN MARRIAGE

by CHARLES A. CLINTON, M.D.

AT last . . . a book of sex technique that treats the subject frankly and in detail without offending . . . A medical authority proves that it is possible to cast aside all pretense and false modesty and discuss the most important single factor in human life in an intelligent, instructive manner.

■ It is the purpose of this book to give exact instructions for marital procedure. . . . Dr. Clinton's long years as a physician and wide clinical experience merit your confidence.

■ Your name and address on margin brings you this valuable book C.O.D. Pay postman $2.00 plus postage. Money back in five days if not satisfied.

PIONEER PUBLISHING CO. Dept. 10A3. 1270 Sixth Ave., Radio City, N. Y. C.

SMALL HEAD CLEANS TEETH correctly!

BE *SURE* TO USE TAKAMINES!

Don't accept imitations! TAKAMINE Toothbrushes have EVERY feature you NEED for proper brushing care. 1. Finest Quality Bristles. 2. Rigid straight handle. 3. Tufts scientifically spaced for gum massage. 4. Approved small head reaches all tooth surfaces. No brush, however expensive will outlast TAKAMINE! Start using them for CORRECT tooth brushing.

6 FOR 60¢

TAKAMINE CORP.,
132 Front St., New York City
If your druggist or department store cannot supply you, send 60c to us for INTRODUCTORY PACKAGE of 6 Standard TAKAMINE Toothbrushes (reg. price 75c).

NAME.....
ADDRESS.....
SEND COUPON

ADJUSTABLE MATERNITY BRASSIERE

. . . with Talon-Slide Front Opening

Opens Like a Little Jacket, with Smooth, High-Built, Finely Supporting Back

Designed to give correct support during the prenatal period, with elastic gussets and full-side lacings to allow fully for expansion. This brassiere helps preserve natural breast contours, as well as assuring a neat, trim appearance. The Talon-slide front eliminates any back fastening and enables the brassiere to open full length, jacket fashion. Send for descriptive booklet H. Y.: Maiden Form Brassiere Co., Inc., New York, N. Y.

AT ALL LEADING STORES $3.50

Maiden Form BRASSIERES
GIRDLES CORSET BELTS

NONE GENUINE WITHOUT THIS LABEL

ADVICE FOR PARENTS

Arrange the breakfast and lunch hours so that there is no rushing at home or to school.

See that the children are dressed simply, neatly, modestly and suitably in accordance with the weather.

Insist upon children under 14 having at least ten hours' sleep.

Find out how much time should be devoted to home work, and see that it is done.

Provide a quiet place for home study, with good light and ventilation. Prevent interruption as far as possible.

Show an interest in the children's school work, athletics and other activities.

Do not criticize the teachers or school within the children's hearing. Always hear both sides of every question and ask the teacher about it.

Instil in the children habits of obedience and respect for authority.

Picture the school as a happy, desirable place, rather than as one children should dread.

Keep in mind that the school offers unlimited opportunities to those who take advantage of them, parents as well as pupils.

Plan to meet other parents in the school. It will help you to understand your children better. Mothers should arouse the interest of fathers in the school activities and get their cooperation. If there is a parent-teacher association in your children's school, join it. If there is none, why not form one? Intelligent cooperation brings splendid results to all.—*United Parents Associations of Greater New York Schools.*

Education does not mean teaching people what they do not know. It means teaching them to behave as they do not behave. It is not teaching youth the tricks of numbers and the shapes of letters, and then leaving them to turn their arithmetic to roguery and their literature to lust. It means, on the contrary, training them into the perfect exercise and kingly continence of their bodies and souls. It is a painful, difficult and continuous work to be done by kindness, by watching, by warning, by precept and by praise, but above all—by example.

—*John Ruskin.*

He who can plant courage in the human heart is the best physician.

—*Hoosier Res-cuer.*

The SEX TECHNIQUE IN MARRIAGE • By I. E. Hutton, M.D.

"Dr. Ira Wile describes the book as a clear, succinct, non-emotional, authoritative and conservative exposition of the practical factors involved in making marriage successful on the sexual level. That describes the book exactly . . . It is primarily concerned with the conduct of the honeymoon and with the technic of the sexual performance."
—*Dr. Morris Fishbein, Editor Journal American Medical Assn.*, in *Hygeia.*

Acclaimed by the Medical Press Everywhere

Price $2, incl. postage. 5-Day Money-Back Guarantee
Emerson Books, Dept. 127, 333 Sixth Ave., N. Y.

Schools and Camps

Radford School For girls. Accredited college preparation in ideal year-'round climate. Open air classes in patio. Special work in music, art, dramatics, secretaryship. Character and personality developed. Sports, riding. Limited enrolment. Not for profit. Catalog. Lucinda de L. Templin, Ph.D., Principal, 4700 Austin Terrace, El Paso, Texas.

Schools and Camps for Exceptional Children

DEVEREUX SCHOOLS

Devereux Tutoring Schools, separate buildings, boys, girls. Individual programs; social training stressed. Camp at North Anson, Maine. Devereux Farms, Glen Moore, Pa., with industrial shops for young men over 16; cultural lectures, music, athletics. Helena Devereux Fentress, Director, Executive Office, Box A, Berwyn, Pa.

Beverly Farm, Inc. Home and school for nervous and backward children and adults. Successful social and educational adjustments. Occupational therapy. Dept. for birth injury cases. Healthfully situated on 220-acre tract, 1 hr. from St. Louis. 7 well-equipped buildings, gymnasium. 38th year. Catalog. Groves Blake Smith, M.D., Supt., Box H, Godfrey, Ill.

<> TROWBRIDGE TRAINING SCHOOL <>

Home school for nervous, backward children. *Best in the West.* Beautiful buildings. Spacious grounds. Experienced teachers. Individual supervision. Resident physician. Enrolment limited. Endorsed by physicians, educators. Booklet. E. Haydn Trowbridge, M.D., 1810 Bryant Bldg., Kansas City, Mo.

STUTTERING CORRECTED

Stuttering and stammering, delayed speech, indistinct speech and baby talk, post-operative cleft palate speech, disorders of speech due to partial deafness, corrected. An ethical school.
WILSON SCHOOLS, Arnold Place, Dayton, Ohio

COSMETICS AND ALLIED PREPARATIONS

Facts concerning preparations for the skin and for the hair, deodorants, depilatories, etc. most of which have appeared in the Bureau of Investigation department of THE JOURNAL A. M. A. Miscellaneous articles by Dr. Arthur J. Cramp from HYGEIA. 60 pages. Price 15 cents.

AMERICAN MEDICAL ASSOCIATION
535 North Dearborn Street - - Chicago

WHY DO WE OVEREAT?

Heading the list of mistakes in eating is that of overeating. When one neglects to chew food properly one is almost certain to overeat. The reason for this, explains *Life and Health* magazine, lies in the taste buds in the back of the mouth, which, in the person with normal appetite, dictate the amount of food necessary. The swallowing of food before the organs of taste are satisfied leads to overeating.

This is not only an unhealthful practice but a great waste, for food not properly masticated is not fully digested and therefore is not fully assimilated by the body. The alarming increase of degenerative diseases which affect the vital organs —the heart, blood vessels, liver, pancreas and kidneys—has been found to be generally due to overeating.

Another pernicious habit is that of irregular eating. The importance of regularity in meals cannot be overemphasized. The functions of the body are based on rhythmic action. Irregularity of any sort disturbs this rhythm and is one cause of indigestion and constipation.

Many things eaten between meals give the body more food than it needs. The average person takes from 1,500 to 3,000 calories daily at regular meals, which is sufficient. He gives little thought to the fact that the popular milkshake furnishes from 400 to 500 calories with 12 grams of protein. The average sandwich, also frequently eaten between meals, contains about 200 calories; the usual serving of ice cream about 500 calories with 7 grams of protein, and candy bars from 200 to 400 calories each.

Eating before retiring should be condemned for three reasons: Usually the extra food is unnecessary; it adds an extra burden to the digestive organs by causing them to work when they should be resting, and these activities of the digestive organs interfere with the night's sleep. Of course there may be exceptions to this rule in the case of invalids who may be benefited by a light hot drink before retiring.

The evening meal should be taken at least three or four hours before retiring and should consist of easily digested food. Under normal conditions with such a light evening meal the stomach should be empty at the end of that time, and one can be assured of a good night's rest. Extremes of temperature should be avoided in all foods.

To eat right, think right and sleep will bring one close to paradise on earth. Try these three.

MOM SAYS I'VE GOT TO SEE THAT YOU KIDS KEEP YOUR HANDS CLEAN
I HATE TO WASH
WHY NOT KEEP YOUR OWN HANDS CLEAN FIRST?
HEY, WAIT 'TILL I FINISH! MOM SENT FOR THESE LIFEBUOY WASH-UP CHARTS— ONE IS FOR ME. SEE, YOU KEEP SCORE LIKE A REGULAR GAME
SAY, THIS LOOKS PRETTY GOOD, SIS
LET'S HANG 'EM UP. WE'LL START IN TODAY. BET I BEAT!
LATER
HERE WE ARE, MUM. SIX CLEAN HANDS ALL READY FOR DINNER!
YOU DARLINGS!
I HAD A SWELL RECORD THIS WEEK—BATHS AND EVERYTHING
ME, TOO!

CHILDREN love to play games. They thrill over a contest. Cleanliness becomes *fun* with the Lifebuoy Wash-up Chart. They keep score. They try to break their own record or a sister's or brother's. There's a coveted Health Guard Button to strive for and a fascinating spin-win-grin game, called "Whoopo."

No longer do *you* have to scold and remind. Youngsters become eager to wash and bathe. Cleaner hands become a habit. An important health lesson sinks in. For the Lifebuoy Chart tells, in pictures and words, how germs get on our hands from things we touch. (The Life Extension Institute lists 27 germ diseases hands may spread.) But washing hands often—*always* before meals—with Lifebuoy Health Soap removes germs, helps safeguard health.

A fine complexion soap

You'll be delighted with Lifebuoy as a complexion soap. It cleanses the skin so thoroughly, yet so gently! It's actually more than 20% *milder* than many so-called beauty soaps. "Patch" tests made on the skins of hundreds of women prove it! You can use Lifebuoy in hot, cold, hard or soft water. It gives loads of rich, purifying lather.

FREE TO MOTHERS: A Lifebuoy Wash-up Chart and school-size Lifebuoy for each of your children. Just fill out and mail coupon below. It will be the "happy ending" to your Clean Hands problem.

Lifebuoy
Health Soap
FOR FACE, HANDS, BATH

(This offer good in U. S. and Canada only)

LEVER BROTHERS CO., Dept. 193, Cambridge, Mass.

Please send me, free, Lifebuoy school-size cakes and Wash-up Charts for my____children.

Name.....

Address.....

City.....*State*.....

ACCEPTED FOODS

This department is a useful guide in the selection of foods of quality, advertised with truthful claims. All products in this section as well as any others advertised elsewhere in HYGEIA stand accepted by the Committee on Foods of the American Medical Association, and are entitled to bear its "Seal of Acceptance." The foods listed here are but a portion of those accepted by the Committee. If you desire information regarding any other food product, you are invited to write to HYGEIA.

OLD ANTIQUE
Pale Dry
Ginger Ale ◆ ◆ ◆

Clear and bubbling, zestful and refreshing. Old Antique is a ginger ale that will please you. When you order ginger ale, ask for Old Antique. Keep several bottles of it in your refrigerator — to be ready when you want it. For you'll want more, once you taste Old Antique.

Bottled by
The Better Bottler in Your City

Dr. Phillips
CITRUS FRUIT JUICES
Recommended for Children
as a Source of Vitamins A, B and C

Dr. Phillips Orange and Grapefruit Juices and Grapefruit Hearts are uniformly rich in vitamin C and always full of flavor. Tree-ripened, they are canned fresh from the grove under the most modern scientific and sanitary conditions. Easy to serve at any time, anywhere. Get several cans today.

DR. P. PHILLIPS CO., Orlando, Florida

LOUDON Brand
PURE
TOMATO JUICE
Delicious—Refreshing—Appetizing—Zestful
Brimming with Sunshine and Health
The Loudon Packing Company - - Terre Haute, Indiana

GOLDEN STATE
Golden State
EVAPORATED MILK
California's own brand
Golden State Company, Ltd.
SAN FRANCISCO — LOS ANGELES

PLEASE MENTION HYGEIA WHEN WRITING ADVERTISERS

THE CASE OF THE CORYPHEE'S COUSIN

(Continued from page 246)

the blood. Fatalities have even been reported in those who were taking it 'on their own,' so to speak. But it was only very recently, indeed, that it appeared that this drug could produce cataracts."

"You mean to tell me that doctors would keep on using that stuff when they knew all these things could happen?" said Carey incredulously.

"Oh, wait a minute! Who said anything about doctors? Of course, even they encountered trouble; but they knew the possibilities, and they were on the lookout for it. Don't forget that there isn't anything to prevent you or any one else from making up a preparation for reducing rapidly, and putting some of this stuff in it. And what prevents you from neglecting to mention that it is in your preparation or from advertising that you have for sale a 'safe, harmless and effective' remedy? Or what prevents any fool woman who wants to from eating it wholesale?"

"I beg your pardon," grinned Carey. "You win."

"How does this stuff cause cataracts?" I asked.

"I can't tell you," replied Trebor. "That it does, however, seems pretty clear from the available evidence, for this isn't the only case by a long shot."

"I suppose," I said, "as soon as she told you what she was taking you knew this stuff was in it, and the problem was solved. She practically gave you the answer herself, didn't she?"

"Well, it wasn't *quite* that easy, although of course what she told us did put us on the right track. Unfortunately, the names given to these remedies do not always indicate their composition. So, at the start, we didn't know whether she was taking something with thyroid in it or what. But we did know that thyroid, even in excessive doses, doesn't usually cause cataract formation. We knew too, from reports in the medical literature, that dinitrophenol was being used as a reducing agent. Also, from recent literature we had learned that it

When Doctor Says Give A Wheat Cereal · Be sure to look for this Seal

Start Baby on Malt-O-Meal. Its Toasted Malt Flavor Stimulates appetite, encourages the child to eat the amount required. Nourishing. Easily Digested.

Send for 4 servings free to try
CAMPBELL CEREAL CO.
Minneapolis, Minn.

MALT-O-MEAL

Prince
VETA-RONI
SOUP DOTS
The High Protein Food

A WHOLESOME, nourishing breakfast dish with a flavor you'll love . . .
MALTEX CEREAL
A good source of Vitamin B and protein for building and repairing body tissue. Has a delicious barley malt flavor that will tempt you to eat heartily.
The Maltex Co., Burlington, Vt.

CLOVERDALE
Pure Mountain Water Sparkling
Wholesome and invigorating—comes from the lofty mountains of Pennsylvania. Used in making Cloverdale Sarsaparilla and Cloverdale Ginger Ale—both Pale Dry and Amber.
CLOVERDALE SPRING COMPANY
Plant: Newville, Pa. Office: Baltimore, Md.

ASSURED HIGH QUALITY
C-H-B CALIFORNIA HOME BRAND
Tomato Juice
Tomato Catsup
Chili Sauce

EHMANN RIPE OLIVES
For the original goodness and rich natural oils of ripe olives at their best, try the Ehmann brand. These olives are tree ripened and carefully selected. Guaranteed to be free from artificial coloring matter or preservatives.
EHMANN Olive Company Oroville, California

Mention HYGEIA when writing to Advertisers

was strongly incriminated as a cause of cataract formation. So we tested the urine for the presence of dinitrophenol and found it. That solved the problem."

"Is this kid going to be blind?" Carey inquired with great interest.

"Just how much disturbance of vision there will be, finally, remains to be seen. Of course, the cataract formation is as yet early. As the drug has been removed from the picture in the sense that she is not getting any more, it is to be hoped that the condition may improve to some extent, at least. Certainly she will never have as good vision as she had originally. There is nothing that can be done directly to clear up the lens. Nothing we can give her will do that. If it remains cloudy her vision will be definitely and permanently affected. If it progresses to the point where the lens becomes a completed cataract, that is, hard and opaque, then it will have to be extracted. That can be done surgically and then, of course, she'll be without a focusing lens. To some extent that can be compensated for by glasses, but she'll never have perfect eyesight under those circumstances."

"Now isn't that the limit!" exclaimed Carey sympathetically.

"Yes, it is," Trebor assented. "It just goes to show that if you want to monkey with an engine you ought at least to get a mechanic to direct the job, and if you want to monkey with your body you ought to let a physician manage the business for you. Then there won't be any loose ends flapping about to fly up and put your eye out."

"And that just reminds me," said Carey abruptly. "You've got a loose end flapping about here. Just where does the World War come into this?"

"The third degree is on you, Trebor," I chortled. "You'd better talk—pronto, too!"

"I'll talk," said Trebor with a broad grin. "The Inspector would like to have the World War brought into this, eh?"

"The Inspector nothing!" Carey retorted indignantly. "You brought it in! Well, where is it?"

"You see, dinitrophenol was one of the chemicals used in the making of explosives during the World War. For the benefit of any skeptics who may be somewhere in the immediate vicinity, among the

3 "Milk Fights" a Day?

Leading diet authorities advise that children should consume at least one quart of milk a day. But does that mean a battle at every meal? Does that mean "milk fussing" with its attendant lost temper and frazzled nerves? If so—here's good news! Just alternate milk with KRIM-KO, the balanced chocolate flavored drink pasteurized daily and delivered in bottles by selected local dairies. KRIM-KO is rich in phosphorus and calcium. Equal to fresh milk in food energy value. Helps build and maintain normal weight. Accepted by the Committee on Foods of the American Medical Association.

Give KRIM-KO daily to the child who refuses milk. Add it to the diet of the child who will not drink his full quart of milk a day. It's the sure way to provide elements which aid in building straight, strong bones and fine, sound teeth. Serve KRIM-KO Chocolate Flavored Drink between meals. It is readily digested. Satisfies the youngsters' between-meal hunger. It leaves the stomach quickly and thus does not interfere with their appetites for the next meal. Economical, too.

Free Supply for Physicians

If you have cases of "milk fussing" or milk refusing, on which you would like to test KRIM-KO, we shall be glad to furnish you with complete information about KRIM-KO and its place in the diet, and a supply of bottled KRIM-KO fresh from the KRIM-KO Dairy in your vicinity. Write today to the KRIM-KO COMPANY, 4830 S. Turner Ave., Chicago, Ill.

KRIM-KO

REG. U.S. PAT. OFF

•CHOCOLATE FLAVORED DRINK•

Krim-Ko is chocolate flavored, pasteurized, partially defatted milk (added Tapioca-salt).

WHITE BREAD

An interesting set of questions and answers in booklet form. A copy may be obtained free by request to the

AMERICAN INSTITUTE OF BAKING
1135 Fullerton Avenue . . . . Chicago

HIGHLAND

100% PURE

Vermont Maple Sap Syrup

Packed by
CARY MAPLE SUGAR CO., INC
St. Johnsbury, Vt.
"The Maple Center of the World"

BREAD FOR FOOD ENERGY

Doesn't your child like cereals? Then you haven't given him WHEATIES yet!

Give your children plenty of good, wholesome baker's bread. It satisfies their lusty appetites and supplies the food energy growing youngsters need. See third cover for facts about bread.

STOMACH OUT OF ORDER?

Having more and more trouble with upset stomach because of caffeine-containing coffee? Then follow the example of thousands who have been in your place. Change to Kaffee-Hag Coffee. You'll find it as delicious as any coffee you've ever used, and it's 97% free of upsetting caffeine.

Promise yourself now you'll never have caffeine-caused upsets again. Get a can of Kaffee-Hag Coffee today. Make it good and strong. Drink all you want. You'll love its aroma, its flavor, and its goodness. And you'll be free from all the trouble caffeine can cause.

KELLOGG CO., Battle Creek, Mich.
Please send trial can of Kaffee-Hag Coffee. I enclose 15c.
Mr.
Mrs. . . . . .
Miss
Street . . . . . .
City . . . . . State . . . . .
(8) RYB 3

Try Heinz Double-Sure Strained Foods for Baby

You know Heinz quality in foods. You can have this same high standard in strained foods for baby. Insist on Heinz. Send for valuable baby diet book featured on page 287.

H. J. HEINZ CO., Pittsburgh, Pa.

Hurff's Tomato Juice has been accepted by the Committee on Foods of the American Medical Association. Hurff's Tomato Juice is made from carefully selected vine ripened New Jersey tomatoes, and is a dependable source of vitamins A, B and C.

EDGAR F. HURFF
Swedesboro, N. J.

TOMATO JUICE

occupational troubles associated with the manufacture of munitions, especially in plants using dinitrophenol, was progressive loss of weight. Need I go further?"

"That's far enough for me," said I.

"And that's good enough for me too," admitted Carey. "But you'll have to admit that you made tricky use of that bit of information."

"Not at all," Trebor protested with mock indignation. "That bit of information, as you call it, might have been neglected for rather a long time, but recently pharmacologists and physiologists began to study the chemical in order to find how it produced the symptoms associated with intoxication, in order to devise even more effective means of preventing those symptoms in plants where dinitrophenol was and still is used in the production of explosives. When they found that it speeded up the body metabolism it was just a natural sequence of events that it came to be used first in the treatment of obesity and then as a reducing agent by people who really don't need any such drastic methods at all."

"Humph!" grunted Carey. "Pretty smart just the same."

"On the contrary, 'Elementary, my dear Watson, elementary,'" quoted Trebor with an airy wave of his hand.

(To be continued)

[NOTE.—Reports concerning the occurrence of cataracts in individuals taking dinitrophenol have recently been presented in *The Journal of the American Medical Association* by Drs. W. W. Boardman, W. D. Horner and R. B. Jones (July 13, 1935); S. S. Bohn (July 28, 1934), and N. Sidel (July 28, 1934). A summary of the toxic effects of dinitrophenol is reported by Dr. S. Weiss in the *American Journal of Medical Sciences* (Nov. 1934).]

Every advance in our knowledge increases the potential capacity of man. But the mere increase of knowledge, and particularly the knowledge of preventive medicine or the ways and means of personal hygiene and well being can do nothing of itself to prevent disease and safeguard health, unless it be understood, accepted and practiced.

—Sir George Newman.

Therefore as I said before, our children from their earliest years must take part in all the more lawful forms of play, for if they are not surrounded with such an atmosphere they can never grow up to be well conducted and virtuous citizens.—*Socrates.*

You would see some of the fields where the vegetables for Gerber's Strained Foods are grown—fertile gardens under our own control to produce the finest possible specimens for feeding your baby. Raising "Home Grown" vegetables is not enough. Harvested exactly when they offer the highest food value, they are rushed to our kitchens to prevent the loss of vitamins that occurs when vegetables are exposed to the delays of transportation and storage. And every one of our farms is less than an hour's trucking distance away!

Add to this care in growing, a process that protects the essential vitamins and minerals, and you have the reasons why Gerber's wins the praise of experts on baby feeding. Ask your doctor about Gerber's.

Gerber's Are Shaker-Cooked

For the same reason that you stir food as you heat it, every can is shaken during the cooking process to insure thorough, even temperature throughout the can thus permitting a shorter cooking time and giving Gerber's a fresher appearance and flavor.

Gerber's

Shaker-Cooked Strained Foods

STRAINED TOMATOES, GREEN BEANS, BEETS, CARROTS, PEAS, SPINACH, VEGETABLE SOUP. ALSO, STRAINED PRUNES AND CEREAL.

Your Baby Will Enjoy the New Gerber Doll

Send 10c and Three Gerber labels for this little sateen, stuffed Doll. Specify whether boy or girl doll is desired.

GERBER PRODUCTS COMPANY 123
FREMONT, MICHIGAN
(In Canada: *Grown and Packed by* Fine Foods of Canada, Ltd., Tecumseh, Ont.)

NAME_____

ADDRESS_____

CITY_____ STATE_____

AGE OF BABY_____

"Mealtime Psychology", a booklet on infant feeding sent free on request. "Baby Book", on general infant care, 10c additional.

AMERICA NEEDS TO KNOW HOW TO PLAY

A new note is being struck in America at present, and it has to do with the ancient concept called the "good life." Is it really attainable, and in what sense is it possible for men living on this planet so to adjust themselves to their environment and to each other as to bring about a decent and wholesome experience? *Recreation* magazine discusses these and other questions that people everywhere are asking themselves.

Life is not good for millions of citizens at present. Life is not good when many of our actions are impelled by fear, worry or hatred. Life is not good when our social relationships leave us unrefreshed, when in association with one another in planning out our common destiny we discover that the greater our proximity, the less we like each other. Finally, life is not good unless our experience is realistic; and for most of us it isn't. We live in a gigantic fantasy of no insight, no experience and mechanical motions.

There exists a curious notion that play is likewise a mechanical time filler. Play *is* life; it is one of the ways in which man expresses what is most free in him, what is most human. Recreation is not a set of exercises. It is primarily an attitude toward life, a sort of gallant one.

The problem of adult education looms large. We commonly hear it said when young persons get married, "Now they are going to settle down at last." That is precisely what happens. Five years after they are settled down the sag has become not only a muscle sag but a mental sag.

What people do aside from their necessary, compulsory labor is just as important as the labor itself. Recreation must become a match for industry, for technology, for science.

A business man who thinks nothing of evading the payment of his income taxes wouldn't dare step over the line when he is serving a ball in tennis. He would be ashamed. It is evident he hasn't been taught the relationship between play and growth. He thinks play is a way of forgetting about the badness of his other experiences.

It is incredible that Americans should stop at this point and not strive all together to bring about in this country a renewal of the old American dream—a good life for everybody.

QUESTIONS AND ANSWERS

(Continued from page 266)

Alcohol: Effect on Development and Heredity

To the Editor:—A few days ago I heard a nationally known lecturer state that he knew of several cases in which a baby was born, lacking a part of its mental faculties because one or the other of the parents was either intoxicated or contained alcohol in his system at the time the baby was conceived. Is this possible? What effect, if any, would alcohol in the body of one of the parents at the time of sexual intercourse have on the child conceived during that intercourse?

S. A., Illinois.

Answer.—A few years ago there was published a collaborative treatise entitled, "Alcohol and Man. The Effects of Alcohol on Man in Health and Disease" (The Macmillan Company, New York, 1932, Editor-In-Chief, Haven Emerson, M.D.). Chapter V of this book is divided in two parts: Part A, by Charles R. Stockard, is entitled "The Effects of Alcohol in Development and Heredity"; part B, by Charles B. Davenport, bears the title "Effect of Alcohol on Animal Offspring." If the inquirer can obtain this book from a public library he will be surprised to learn that the injurious effects of alcohol on the male and female germ cells or on the product of conception have been, to say the least, greatly exaggerated. A fairly detailed review of the available literature seems to show that the male germ cell can withstand exposure to 5 per cent ethyl alcohol (frog) for from two to three hours; and that the male germ cells of the rabbit are not injured by a half hour exposure to weak alcohol concentrations, running as high as 7 per cent. All concentrations were higher than could possibly occur in the body of the male mammal. Again, Gee found that male cells exposed to 20 per cent alcohol can still fertilize. Stockard then reports on his own experiments involving more than 5,000 guinea-pigs. Heavily and repeatedly alcoholized, the health or activities were not affected, and the life span of the animals was not shortened "to any degree." The progeny of these alcoholized parents is smaller than in the control group; the size of the young at birth is not very different, but the mortality is almost twice as great; namely, a ratio of 180 as against 100 for the nonalcoholized parents. Even here, however, it should be noted that the treated guinea-pigs "were alcoholized on the basis of their life span far more severely than might be the case with human beings." Stockard concludes that there is no specific effect of alcohol on the offspring. In résumé he writes: "In sufficient concentration we have found that it is effective, but such alcohol concentrations as are necessary to directly affect the development of lower animals are far in excess of the possible alcohol content of human blood compatible with human survival. Solutions of table salt . . . and other commonly consumed foodstuffs induced abnormality in embryonic life development as definitely as does alcohol, under these experimental conditions, but here again doses of a concentration far higher than can be tolerated in the human blood are necessary in order to bring about abnormal development of directly treated eggs." Again, the results indicate that the content of alcohol in human blood is fortunately never sufficiently high to present a danger to the developing embryo. Or, note these curious results reported on by Davenport: "The litters were 13% smaller in the tests than in the controls. In the matter of number of litters the untreated rats from treated parents, or treated grandparents, yielded *larger litters* than their control cousins; in the alcoholized fowls the average per cent of fertility of the eggs is diminished but the average hatching power is increased." Also, the longevity of the young of alcoholized parents was increased. "There is much evidence that generations of alcoholism in man have produced gametes relatively resistant to alcohol; so that diminished fertility of alcoholics and defective offspring of alcoholics are, at least, not the common result." And finally, Stockard reports: "When one critically scrutinizes the records and works back on the family histories of abnormal children and the degenerate descendants of chronic alcoholics, the element of already present familial degeneracy is almost invariably found to be there. Until individuals of the most vigorous physical stocks have acquired severe alcoholism and have later mated with similarly vigorous persons to give rise to abnormal offspring we cannot be certain that human alcoholism has produced degeneracy. The result of such matings is not now available."

You hoard not health for your own private use, but on the public spend the rich produce.—*Dryden.*

Every mother knows the protection a good fever thermometer can give her baby's health. No mother wants to be without one. Yet they're expensive and often broken. Here's *your* chance to get a regular $1.25 certified thermometer made by Faichney, Watertown, N.Y., on a special limited offer. Simply send 12 *labels from* STOKELY'S STRAINED FOODS *and 25c to Stokely Brothers & Company, 2351 South East Street, Indianapolis, Indiana.* Your thermometer will be sent to you immediately—postage prepaid.

REMEMBER MOTHER! There's no fussing or fretting when Stokely's are on baby's menu. Baby takes *these* strained foods eagerly; they taste so good. Nine tempting varieties—each prepared to retain natural flavor and food value. Smoothly strained to be readily digestible. Packed in golden enamel lined cans, ready to heat and serve. ASK YOUR DOCTOR.

You Can Depend upon These
General Foods Products
◆ *Ask for* ◆
MINUTE GELATINE INSTANT POSTUM
CALUMET BAKING POWDER
D-ZERTO JELLO
DIAMOND CRYSTAL IODIZED SHAKER SALT
SANKA COFFEE See page 288

What's in a Can of Canned Food?

Modern knowledge is shattering many false ideas about canned foods. Be sure to read the highly informative series of ads in HYGEIA on values of canned foods. See page 195.

AMERICAN CAN COMPANY, New York City

KELLOGG'S ALL-BRAN

Supplies gentle bulk to aid regular habits. A delicious laxative food that may be served in a variety of ways.

■ **Kellogg's Kaffee Hag** ■

A delicious coffee with the troublesome caffeine removed. Try it if your doctor advises you against coffee. See pages 283 and 286.

■ The Kellogg Co., Battle Creek, Mich. ■

ANCIENT EYE CURES ARE PREFACE TO MODERN MEDICINE

Some seemingly ridiculous remedies used for eye troubles centuries ago employed the same fundamentals which modern medicine now uses more effectively. *The Sight-Saving Review* traces the history of some of the most popular beliefs and superstitions about the human eye.

Piercing the ears to supply support for the wearing of earrings, an old and interesting form of human adornment, gradually developed into a ceremony containing all the element of awe and mystery connected with the drawing of blood. As a remedy for sore eyes, when the sufferer was an adult, its chief value was to increase confidence in recovery.

The use of lemon juice, freshly squeezed, to prevent or cure sore eyes in babyhood is still respected in rural sections of Spain and Spanish speaking countries. Although citric acid has no power to strengthen the eyes the remedy must surely have effectively followed the saying, "No pain, no cure."

A widespread European ceremony was the celebration of midsummer night with huge bonfires and flowers. It was believed that persons who looked at the fires on that night through the petals of flowers would be protected from pain or disease of the eye for the coming year.

During the middle ages a popular cure for sore eyes consisted in wearing around the neck a clean sheet of paper containing a magic formula of Greek words. This charm was guaranteed, however, only if the charmer and the charmed were "in a state of chastity," the verification of which was difficult, if not impossible.

Remedies for sight deficiencies were often developed through an interesting process of reasoning. The owl is able to see in the dark. Man could not but wanted to. In India, therefore, it became the custom to eat the eyeballs of an owl to see better in the dark. Similarly in Brazil the dropping of fluid from the eyes of a keen-sighted falcon into the eyes of a human being was thought to increase his keenness of sight.

In the Papyrus Ebers, written over 4,000 years ago, human brains were prescribed as follows for sore eyes: "Mix one half a healthy human brain with human bones and with it anoint the eyes each evening. Dry and finely powder the other half of the brain and with it anoint the eyes in the morning." At the present time pituitary gland extracts of the brain are used in the treatment of eye diseases.

SAFETY MEASURES FOR THE HOME ARE VITALLY IMPORTANT TO ALL

Such apparently trifling hazards as a slippery floor, a shaky banister, a poorly lighted stairway or a rumpled rug account for a large proportion of some accidents, according to *Safety Education* magazine. Last year approximately 34,500 persons were killed in the United States in home accidents. In addition to these 34,500 lives lost as a result of carelessness and bad housekeeping, 127,650 persons were permanently injured.

The toddler who puts his toys carefully away or the grown-up who mends a broken stair tread as soon as he discovers it may be saving a life.

According to a report of the Kansas State Department of Health, 39 per cent of the fatal falls occurred in the bedroom, 21 per cent in the living room, 16 per cent on stairs and steps, 11 per cent in the kitchen, 6 per cent in the dining room, 4 per cent in the bathroom and 3 per cent in other parts of the home.

As might be expected the largest number of fatal burns occurred in the kitchen, 57 per cent over a period of four years' study; 19 per cent happened in the living room, 12 per cent in the bedroom, 5 per cent in the bathroom, 3 per cent in the basement and 4 per cent in the dining room.

An oil mop or a cloth saturated with furniture polish in a closet with the door closed just about meets all the requirements for spontaneous ignition. The closet is warm; there is a certain degree of humidity in the atmosphere; a limited amount of air comes in through the cracks around the door. With just enough of each element a fire will result. It may take two months, or it can be accomplished in an hour. A good galvanized iron can for keeping all such cleaning materials, stored if possible on the back porch, is a simple and economical safeguard.

Care and intelligence are especially needed in handling the many electrical devices which are now found in most homes and which have eliminated much of the drudgery of housekeeping. Irons, toasters, washing machines, heating pads and other appliances are now equipped with regulators and other devices which make them accident proof when ordinary care is used.

Vitamin Certified,
Non-Separating, Undiluted
Pure Tomato Juice

THE SUN-RAYED COMPANY
FRANKFORT, INDIANA

PLEASE SEE
PAGE 193

DURKEE'S PURELY AMERICAN
VEGETABLE
MARGARINE

Made entirely from American produced ingredients. Delicious. Wholesome. For cooking, frying, baking and table use.

Ask Your Grocer for Durkee's Margarine.

Durkee Famous Foods, Inc.
Chicago, Ill. Norwalk, Ohio

Drink Krim-Ko* for Calcium

A delicious beverage, rich in bone and tooth building calcium. Children drink Krim-Ko without coaxing. See page 283 for additional information on Krim-Ko.

* chocolate flavored, sweetened, partially defatted milk (added tapioca—salt).

KRIM-KO CO., 4830 S. Turner Ave., Chicago

BABY DUE SOON?

Has your doctor advised you against coffee because of the coming "new arrival"? Has he told you that caffeine may be irritating to your nerves, kidneys, and digestion? You'll be glad to know there's one coffee you can safely drink—Kellogg's Kaffee-Hag Coffee. It's *real* coffee, *all* coffee, *fine* coffee—but 97% of the trouble-making caffeine has been removed.

And the flavor hasn't been impaired one bit! Made of the finest Brazilian and Colombian coffees obtainable. Be sure to perk it twice as long as ordinary coffee. At your grocer's, or send coupon and 15c for trial can.

Kellogg Co., Battle Creek, Mich.

Please send trial can of Kaffee-Hag Coffee. I enclose 15c.

Mrs.....

Street.....

City.....State.....

(10) HYB 3

Mention HYGEIA when writing to Advertisers

BEHAVIOR PROBLEMS SHOULD BE SOLVED EARLY IN LIFE

Not only do maladjusted children make life miserable and difficult for teachers and parents, but their inability to get on with those around them may have a serious effect on their success and happiness in later life. Parents are aware of this, but many do not know how to help their children, according to *Vital Speeches* magazine.

It is clear that children are problems because of a variety of physical, mental, emotional and social problems which lead to conflicts which they are unable to meet openly. Either they try to fight their way into adjustment, or they shrink from real situations and from life.

It is necessary that both parents and teachers develop the ability to be objective about children's behavior. Maladjustment is a challenge and an opportunity to seek underlying causes of trouble. The adult should never become involved in a strong emotional way with the behavior of children. To think only of horror and punishment when a child disobeys or lies or uses poor taste in language or actions is to make the prevention of future misconduct more difficult.

What is so obvious to those who study children and so difficult for parents to believe is the fact that the child receives most of his standards, prejudices and attitudes from his parents. Practically every child's problems can be traced to difficulties of his parents, and his parents' difficulties are traced easily to various childhood problems. This necessitates two lines of preparation for parents if they are to meet their responsibilities. They must understand themselves, and they must understand their children.

Boys and girls who "just sit," who are unhappy when they are with other boys and girls, who are self conscious and flee from real situations into repeated daydreams are in special need of assistance if they are to grow into normal men and women. Not long ago the very timid children received "A" in conduct for being quiet in school. Their "perfect" conduct was secured on the basis of what they did not do. On the newer report cards, only children who participate successfully in group activities receive high conduct marks.

A good parent, then, is indeed one to whom the child should turn "when a feller needs a friend."

There's no BARGAIN in food for Baby!

BABY is the most important member of any household. His health should be—*must be*—protected at any cost! "Bargains" in food should not be for baby—when absolute safety is so easy to buy and costs so little!

In most stores Heinz Strained Foods cost no more than ordinary brands. And every tin bears, not only the Seal of Acceptance of the A. M. A. Committee on Foods, but the world-renowned Heinz 57 Seal too! No other strained foods bear *both* these Seals of Quality.

Even the smallest youngsters seem to detect the difference in Heinz Strained Foods . . . and prefer them. Garden freshness and rich, natural color are retained in high degree; the wholesome goodness is properly cooked *in*—never cooked out. And Heinz Strained Foods are just the right consistency—neither too fine to be palatable nor too coarse for easy digesting.

Insist on Heinz Strained Foods! Give baby the same *quality* in foods that you enjoy. Give him Heinz—the strained foods he *enjoys* eating!

SEND FOR THIS BABY DIET BOOK

This new book *"Modern Guardians of Your Baby's Health"*, contains many up-to-date facts regarding the various vitamins and mineral salts. Also information on infant care and feeding. Send labels from 3 tins of Heinz Strained Foods or 10 cents. Address H. J. Heinz Co., Department H303, Pittsburgh, Pa.

HEINZ 57 STRAINED FOODS

10 KINDS—1. Peas. 2. Tomatoes. 3. Strained Vegetable Soup. 4. Spinach. 5. Apricots and Apple Sauce. 6. Beets. 7. Prunes. 8. Carrots. 9. Green Beans. 10. Cereal.

ADVICE ON MARRIAGE IS BEST RECEIVED IN THE HOME

In advising young people on marriage it is well to remember that they like to be let alone, to be able to grow up and make their own decisions, to have the approval and sympathetic interest of adults in their lives and activities. They do not like to be preached to; to be too strictly supervised or to feel that they are constantly being spied on by their parents, according to *The National Parent-Teacher* magazine.

It is true that success in marriage and family life can be estimated only at a particular time, in retrospect, or after the life has been lived. There are at least three things to be taken into account in considering the norms of successful family life: first, the fact that husbands, wives and parents are still individuals, persons who have individual needs for self expression; second, how the marriage may contribute to the persistence of the family union and yet promote an adequate group life for all the members, and third, how the marriage measures up from a social point of view.

As children grow from infancy to maturity they become clothed with many habits, mannerisms, beliefs, attitudes and customs which in large measure determine the kind of adjustments they make to different situations. Variations in the manner of "soaking up" culture give rise in part to the wide differences of personality manifested among human beings.

It is important that young people be given an insight into their behavior and habits to help them understand how their early childhood habits may be assets or liabilities in the task of learning to manage their own lives. Careless personal appearance, lack of personal cleanliness, food idiosyncrasies, general untidiness, impatience and many other factors are breeders of discord and conflict in family life.

Two ways in which parents may help children in regard to mating and family problems are by giving them the kind of home and education that will give them a perspective on this life undertaking and by broadening their own knowledge on the subject.

"The health of the people is the foundation on which repose the power and happiness of every country and the care of public health should be the first concern of every statesman."—Selected.

Crisp, crunchy flakes with a marvelous new kind of flavor you'll love. Try them today!

TRY Post's 40% Bran Flakes for breakfast tomorrow! See how your whole family loves them! A real treat . . . so tempting . . . so crisp . . . so delightfully different!

No wonder millions are enjoying these crunchy nut-brown flakes, the finest cereal they ever tasted!

And this delicious cereal, eaten daily, may make a *real* difference in the way you feel. For Post's Bran Flakes contain bran to help supply the bulk food many diets lack!

Why not get a package today! Just one delicious bowlful and you'll make Post's Bran Flakes your regular morning cereal! A Post cereal—made by General Foods.